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**2008 Annual Report  
St. Regis Paper Company Site  
Cass Lake, Minnesota**

**March 2009**

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**US Environmental Protection Agency, Region 5**

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**INTERNATIONAL  PAPER**

**2008 Annual Report**  
**St. Regis Paper Company Site**  
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## **1.0 Introduction**

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This annual report has been prepared to fulfill the requirements of Section IX, Paragraphs 33, 34, and 35 of the January 24, 1995 Administrative Order (Order) issued by the U.S. Environmental Protection Agency pursuant to Section 106(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended, (CERCLA) 42 U.S.C. § 9601 (a) for the St. Regis Paper Company Site.

The January 24, 1995 Order designated the following operable units at the Site:

- OU1 (Treating Facility Operable Unit)
- OU2 (Containment Vault Operable Unit)
- OU3 (City Dump Pit Operable Unit)

These operable units are shown on Figure 1. Construction and implementation of the response actions at the Site began in 1985 and were completed in 1987. Operation and maintenance of the selected response actions are continuing.

This annual report summarizes the results of routine monitoring and maintenance activities at the Site. The 2008 activities are recommended in section 5.0 of the 2007 Annual Report. The Quality Assurance Project Plan (QAPP) and Field Sampling Plan (FSP) were also revised to be consistent with the 2008 Monitoring Plan and were conditionally approved by EPA in the July 28, 2006 letter.

## **2.0 Monitoring Activities**

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Monitoring at the Site in 2008 was conducted in accordance with and as required by the following permits and plans:

- The January 24, 1995 Administrative Order (Order) issued by the U.S. Environmental Protection Agency pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9601 (a).
- Recommendations in the 2007 Annual Monitoring Report.
- Approved Quality Assurance Project Plan, Revision 2, St. Regis Paper Company Sites, (August 28, 2006).

The geologic and hydrogeologic conditions at the Site are described in the following reports:

- Remedial Investigation/Alternatives Report (April 1985).
- Supplemental Remedial Investigation Report (July 1985).
- Groundwater Flow Model, Model Construction (May 1996).
- Hydraulic Capture Zone Report (Revised March 2008)

Monitoring wells at the Site are identified according to the following numbering system, which is based on the screened interval of the well:

Screened Interval	Well Number		
	OU1	OU2	OU3
Monitoring Wells			
Surficial Aquifer – Top	1XX	124-130	21XX
Surficial Aquifer – Base	2XX	--	22XX
Lower Aquifer	3XX	--	23XX
Extraction Wells			
Surficial Aquifer	4XX	--	24XX
Observation/Scavenger Wells			
Surficial Aquifer	5XX	--	25XX

The monitoring wells at OU2 (Wells 124 through 130) are screened throughout the saturated thickness of the surficial aquifer.

The following sections summarize the monitoring activities conducted in 2008 at each of the operable units. These monitoring activities consisted of measuring groundwater levels, collecting and analyzing groundwater and surface water samples, and inspecting and dewatering the containment

vault. Tables 1 and 2 summarize the 2008 sampling events and the locations monitored during each sampling event. The locations of the groundwater and surface water monitoring stations are shown on Figure 2.

## 2.1 OU1 – Treating Facility Operable Unit

### 2.1.1 Activities

#### 2.1.1.1 Extraction System

International Paper is authorized to appropriate up to  $131 \times 10^6$  gallons per year at OU1 as detailed in Water Appropriation Permit # 86-3108. The maximum design capacity and approximate 2008 annual average pumping rate for each extraction well are compared to 2006 and 2007 annual average rates in the following table:

Extraction Well	Maximum Design Capacity <sup>1</sup> [gpm]	2006 Pumping Rate [gpm]	2007 Pumping Rate [gpm]	2008 Pumping Rate [gpm]
401	15	3.3	6.0	5.5
402	15	4.0	5.4	5.4
403	25	6.8	6.6	6.3
404	25	0	0	0
405	25	16.0	13.3	15.9
406	25	4.7	7.9	9.1
407	25	9.4	8.7	9.8
408	15	4.6	4.6	4.6
409	25	16.4	16.7	14.5
410	25	6.3	5.2	5.0
<b>Total</b>	<b>220</b>	<b>71.5</b>	<b>74.4</b>	<b>76.1</b>

<sup>1</sup> Table 1. Response Action Final Report, Cass Lake Treating Facility Site, Prepared for Champion International, September 1988.

The OU1 extraction system was maintained as described in the *Operation and Maintenance Plan, St. Regis Paper Company Site, Cass Lake, Minnesota*, dated March, 1995. Maintenance activities included installing new pumps and/or jetting of the well screen for certain extraction wells. Maintenance activities and daily discharge volumes are documented in the quarterly progress reports that were submitted to EPA. Table 5 presents the average pumping rate by month for each extraction well, along with the monthly precipitation.

### **2.1.2 Water Levels**

Water levels were measured at the OU1 monitoring wells, piezometers, and staff gages in May and November, 2008.

### **2.1.3 Water Quality**

Water samples were collected from the OU1 monitoring and extraction wells in May 2008.

Groundwater samples were collected from monitoring wells screened in the surficial aquifer (top and bottom) and the lower aquifer. All samples were analyzed for pentachlorophenol (PCP) and the polycyclic aromatic hydrocarbon (PAH) compounds listed in Table 6. Samples from monitoring wells 215 and 220 and extraction well 409 were analyzed for the extended list PAHs (Table 7) as described in the 2008 Monitoring Plan.

In addition, water samples were collected from monitoring wells 212, 213, and 220 included in the quarterly monitoring program in March, May, August and November 2008. These samples were analyzed for benzene, toluene, ethyl benzene and xylene, diesel range organics (DRO), and dioxins/furans as well as PCP and PAHs. This quarterly program was initiated at the request of EPA in September 2006.

Surface water samples were collected in May at the north end (CL-N) and south end (CL-S) of the channel connecting Cass Lake and Pike Bay. These samples were analyzed for PCP.

The locations of the OU1 monitoring stations are shown in Figure 2.

## **2.2 OU2 – Containment Vault Operable Unit**

### **2.2.1 Activities**

The containment vault was inspected on May 6 and November 7, 2008. Results of the inspections are discussed in Section 3.3 of this report. Vault dewatering activities continued as described in the September 17, 2001 Updated Leachate Disposal Plan and as discussed in Section 3.4 of this report.

### **2.2.2 Water Levels**

Water levels were measured at the OU2 monitoring wells in May and November 2008.

### **2.2.3 Water Quality**

The vault monitoring wells were sampled in May and the samples were analyzed for PCP and the PAH compounds in Table 6. The locations of the OU2 monitoring stations are shown in Figure 2.

## **2.3 OU3 – City Dump Pit Operable Unit**

### **2.3.1 Activities**

#### **2.3.1.1 Continuation of NAPL Investigation**

In the first quarter of 2008, the non-aqueous phase liquid (NAPL) Investigation, which began with a geophysical investigation in 2007, continued with a subsurface investigation program. The intent of the NAPL investigation was to map the extent of dense non-aqueous phase liquid (DNAPL) and light non-aqueous phase liquid (LNAPL), evaluate groundwater and till unit surfaces, and evaluate possible sources of the DNAPL and LNAPL. Nearly fifty direct-push borings were placed for electrical conductivity (EC) and laser induced fluorescence (LIF) instruments used to evalaute NAPL extent and establish till elevations. An additional fourteen confirmatory boreholes were cored to gather further data to enhance the correlation between EC readings and soil type, and LIF readings and NAPL presence. Refer to the Final NAPL Investigation Report<sup>2</sup> for further information about the borings (including boring logs) and the results of the subsurface investigation.

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<sup>2</sup> Barr 2008. *Final NAPL Investigation Report*, St. Regis Paper Company Superfund Site, Cass Lake, Minnesota. Prepared for International Paper, November 2008.

Three new monitoring wells (2228, 2237, and 2238) were installed during the NAPL investigation at the request of the EPA. Wells 2228 and 2238 have been incorporated into the site's annual monitoring of water levels and water quality (see section 2.3.3 for parameters analyzed). The well screen for well 2237 was inadvertently plugged with grout and groundwater samples could not be collected from this monitoring well. This well will be sealed and a replacement well will be installed adjacent to this location. Boring logs for these three wells can be viewed in appendix E.

### **2.3.1.2 Extraction System**

International Paper is authorized to appropriate up to  $32 \times 10^6$  gallons per year at OU3 as detailed in Water Appropriation Permit # 87-3285. The maximum design capacity and approximate 2008 annual average pumping rate for each OU3 extraction well are compared to the 2006 and 2007 annual average rates in the following table:

Extraction Well	Maximum Design Capacity <sup>3</sup> [gpm]	2006 Pumping Rate [gpm]	2007 Pumping Rate [gpm]	2008 Pumping Rate [gpm]
2401	40	3.7	6.6	6.6
2402	40	13.5	16.5	15.5
2403	40	12.5	19.9	18.0
<b>Total</b>	<b>120</b>	<b>29.7</b>	<b>43.0</b>	<b>40.1</b>

The OU3 extraction system was maintained as described in the *Operation and Maintenance Plan, St. Regis Paper Company Site, Cass Lake, Minnesota*, dated March 1995. Maintenance activities included installing new pumps and/or jetting of the well screen for certain extraction wells. Maintenance activities and daily discharge volumes are documented in the quarterly progress reports that were submitted to EPA in 2008. Table 5 presents the average pumping rate by month for each OU3 extraction well, along with the monthly precipitation.

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<sup>3</sup> Figure 4. Response Action Final Report. Former City Dump Pit Site. Prepared for Champion International. November 1988.

### **2.3.2 Water Levels**

Water levels were measured at OU3 monitoring wells and staff gages at OU3 in May and November 2008. During the November sampling event, the water in 6 wells at OU3 was frozen. Consequently, water level could not be measured at these locations.

### **2.3.3 Water Quality**

In May, groundwater samples were collected from OU3 monitoring wells screened in the surficial aquifer (top and bottom) and lower aquifer. Samples were analyzed for PCP and the PAH compounds in Table 6. A sample from monitoring well 2128 was also analyzed for the extended list PAHs in Table 7 as described in the 2008 Monitoring Plan. In addition, a sample from well 2106 was analyzed for dioxins/furans. Of the three wells installed during the NAPL Investigation, wells 2228 and 2238 were sampled in May and the samples analyzed for PCP, PAHs, extended list PAHs, benzene, toluene, ethyl benzene and xylene, diesel range organics (DRO), dioxins/furans, and metals. Well 2237 was not sampled because the well screen was plugged with grout, rendering the well unusable.

Water samples were collected from monitoring wells 2128, 2233, 2236 and 2336 included in the quarterly monitoring program in March, May, August and November 2008, with the exception of W2128 in November as the water was frozen. These samples were analyzed for benzene, toluene, ethyl benzene and xylene, diesel range organics (DRO), and dioxins/furans in addition to PCP and PAH. The quarterly program was initiated in September 2006 at the request of EPA.

The locations of the OU3 monitoring stations are shown in Figure 2.

## **2.4 Groundwater Treatment System**

The extracted groundwater from the OU1 and OU3 extraction systems is treated prior to discharge to the Cass Lake/Pike Bay Channel to meet effluent limits specified in the NPDES and State Disposal System Permit No. MN0056537 and by EPA (August 15, 2005 letter). International Paper is authorized to discharge treated water to the channel connecting Cass Lake and Pike Bay at a maximum rate of 288,000 gallons per day (i.e., 200 gpm).

The groundwater treatment system utilizes granular activated carbon and consists of three 20,000 lbs carbon units operated in series. The carbon units are designated Adsorber "A", "B", and "C".

### **2.4.1 Activities**

In 2008, the carbon system was operated as indicated below:

Date	Primary	Secondary	Tertiary
Begin 2008	C	A	B
Change-out C on 2/28/08	A	B	C
Change-out A on 7/21/08	B	C	A
Change-out B on 11/6/08	C	A	B
End 2008	C	A	B

During change-out, the spent carbon is removed from the primary adsorber and replaced with fresh carbon. After change-out, the primary vessel is switched to the tertiary position, the tertiary vessel is switched to the secondary position, and the secondary vessel becomes the primary. The spent carbon is dewatered on-site and transported to the Envirotrol facility located in Darlington, Pennsylvania for regeneration. The hazardous waste manifests are in Appendix F. Regenerated carbon is returned and reused at the Site or enters the vendors general carbon supply and virgin carbon to brought to the site. The virgin carbon placed in adsorber B during the November 6, 2008 change-out.

### **2.4.2 Water Quality**

#### **2.4.2.1 Effluent Monitoring**

Influent and effluent samples from the treatment system were collected as required by the revised monitoring program (EPA August 15, 2005).

#### **2.4.2.2 GAC Performance Monitoring**

In addition to the effluent monitoring, samples are collected monthly from the influent and the effluent from each adsorber and analyzed for PCP. This information is used to evaluate PCP breakthrough and plan for GAC change-out.

## **2.5 Fish Hatchery Wells**

Groundwater samples were collected from the four fish hatchery wells in May 2008 and were analyzed for PCP and the PAH compounds in Table 6. The locations of the fish hatchery wells are shown on Figure 2.

## **2.6 MDNR Well #11016**

A monitoring well not associated with the Site and was identified north of the BNSF railroad tracks and downgradient of a former bulk petroleum storage facility. A groundwater sample was collected in May from MDNR Well #11016 and the samples were analyzed for PCP and the PAH compounds in Table 6. The location of this well is shown on Figure 2.

## **2.7 Product Monitoring and Collection Activities**

Floating product monitoring and collection activities are described in the Free Product Recovery/Reuse Plan, April 1993. Monitoring and collection activities were conducted on May 23, 2008. Product level was measured with an interface probe and a disposable bailer was used to recover product from the various product recovery wells. The product recovery activities are summarized in the following table:

Well ID	Product Level [feet below TOR]		Groundwater Level [feet below TOR]		Product Thickness [feet]		Recovered Product [Liters]
	Initial	Final	Initial	Final	Initial	Final	
<b>OU3 – City Dump Pit Area</b>							
W2105	19.58	19.85	23.08	20.02	3.5	0.17	2.0
W2104	None	NA	NA	NA	NA	NA	NA
W2103	None	NA	NA	NA	NA	NA	NA
W2102	None	NA	NA	NA	NA	NA	NA
W2504	7.56	---	7.74	7.66	0.18	---	0.2
2401	None	NA	NA	NA	NA	NA	NA
S2401	None	NA	NA	NA	NA	NA	NA
S2402	7.49	7.69	7.73	7.72	0.24	0.03	18.5
S2403	None	NA	NA	NA	NA	NA	NA
<b>OU1 – Treating Facility Area</b>							
SO401	None	NA	NA	NA	NA	NA	NA
SO402	None	NA	NA	NA	NA	NA	NA
SO403	None	NA	NA	NA	NA	NA	NA
SO405	None	NA	NA	NA	NA	NA	NA

Well ID	Product Level [feet below TOR]		Groundwater Level [feet below TOR]		Product Thickness [feet]		Recovered Product [Liters]
	Initial	Final	Initial	Final	Initial	Final	
W118	None	NA	NA	NA	NA	NA	NA
<b>Total</b>							
							<b>20.7 (5.5 gallons)</b>

TOR – top of riser     --- No measurement

NA ~ Not Applicable (i.e., no product present). These monitoring points are included based on previous findings.

Recovered product was placed in the accumulation tank at the water treatment building located at OU1. A total of approximately 165.8 gallons of floating product have been collected over the roughly 15-year period since product recovery began.

## **3.0 Monitoring Results**

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### **3.1 Groundwater Elevations**

Groundwater elevations measured at each operable unit are summarized in Table 8. Groundwater elevations in the surficial and lower aquifers are consistent with those observed in the past. Figures depicting the groundwater elevation contours and approximate extent of the hydraulic capture zones are shown on Figures 3 through 10.

The groundwater containment system capture zones for OU1 and OU3, as interpreted from the piezometric surface from the GW Contour software (Waterloo Hydrogeologic, 2005) using the 2008 groundwater elevation data, meet the intent of the approved response actions. The primary contaminant source at OU1 is being captured. Contaminant concentrations at stations east of the extraction wells (i.e., W212, W213, W215, W219 and W220) continue to show decreasing concentrations over time. Stations further east have no detectable trend upward or downward, or are below the analytical detection limit. PCP and several PAH compounds were detected in groundwater samples collected at well 105R. These compounds were not routinely detected at this location (i.e., well 105) during previous sampling events and groundwater elevations at well 105 were higher than groundwater elevations closer to the extraction wells. The capture zones depicted on Figures 3 and 7 extend to near well 105R.

The capture zones developed by the extraction wells (Figures 4, 5, 8, and 9) at OU3 encircle W2128 and W2238, and areas slightly south and east. PCP is detected in samples from W2128, but was not detected in the adjacent well screened at the base on the surficial aquifer (W2228). In addition, PCP is not detected in samples from W2129, which is located further downgradient of W2128. As such, the location of W2128 provides the limit of the PCP plume in the upper portion of the surficial aquifer. Based the analytical results, the PCP plume at the base of the surficial aquifer does not extend to W2228, and may be limited to an area near W2238.

The vertical gradient in the upper aquifer near the OU1 pump out system is downward, likely due to the influence of the pump out system. The vertical gradients at OU1 near the channel are upward, likely due to the proximity to the lake. The upward gradients at all paired-well locations at OU3 may be due to pumping from wells with screens near the top of the aquifer, the Fox Creek alignment and wetland as drainage features and the lake.

## **3.2 Water Quality Monitoring Results**

Samples were collected from monitoring wells and surface water stations at the Site and analyzed according to procedures specified in the QAPP, Revision 2. The quality control data are discussed in Appendix A, and laboratory analytical reports are in Appendix B. Analytical data tables provided in this report summarize the parameters and concentrations at each location. Parameters listed with the value followed by "U" or "<" symbol followed by a value were not detected in the sample at the method detection limit (i.e., the value shown in the table). Estimated values are denoted by the "J" qualifier in the data summary tables.

In addition to the laboratory results, the tables show the following calculated results: BaP Equiv (ND =  $\frac{1}{2}$  DL) and BaP Equiv (ND = 0). These benzo(a)pryrene equivalency concentrations were calculated by using  $\frac{1}{2}$  of the method detection limit or zero, respectively, for compounds that were not detected in the sample.

Where appropriate, the groundwater quality data was compared to the intervention limits from the August 15, 2005 letter. The intervention limits for the PCDD/PCDF are orders of magnitude below analytical detection limits.

Water quality results and concentration contours for wells screened throughout the surficial aquifer can be viewed on figures 9 (PCP) and 10 (naphthalene). Results for wells screened in the lower aquifer are shown on figures 11 (PCP) and 12 (naphthalene). The concentration contours are comparable to previous results, and indicate the remediation systems performed adequately in 2008.

The following sections summarize the analytical results of samples collected at the Site during 2008.

### **3.2.1 OU1 – Treating Facility Operable Unit**

The results from the analysis of samples collected from monitoring wells screened at the top of the surficial aquifer at OU1 are summarized in Table 9. PAH concentrations in the samples from wells 104, 105R, 112, 114 and 115 are below the drinking water criteria (i.e., maximum contaminant level (MCL) or Minnesota Health Risk Level (MN HRL)). The concentration of PCP in samples from wells 112, 114, and 115 is below the drinking water criterion. Samples from wells 104 and 105R showed PCP concentration above the drinking water criterion, which is consistent with the results of the previous year.

It is assumed that PCP and PAH concentrations in samples from 118 would also exceed their respective drinking water criteria.

Water quality at the top of the surficial aquifer meets intervention limits at monitoring wells nearest to the channel (i.e., wells 112, 114, and 115).

The results from the analysis of samples collected from monitoring wells screened at the base of the surficial aquifer are summarized in Table 10. PAH concentrations are below the drinking water criteria for all samples from the monitoring wells screened at the base of the surficial aquifer. The PCP concentration is above the drinking water criterion in the samples from wells 212, 215, 218, and 220. The groundwater quality data continue to indicate either a steady or decreasing trend over time at wells 212, 215, 219, and 220 (see Appendix D).

Table 11 summarizes the results from the analysis of the samples collected from the lower aquifer monitoring wells at OU1. PCP and PAH compounds were not detected in samples collected from the lower aquifer monitoring wells.

The results from the PCP analysis of surface water samples from the north and south ends of the channel connecting Cass Lake and Pike Bay in May 2008 are summarized in Table 12. PCP was not detected in either surface water sample.

Table 13 summarizes the BaP Equivalency (ND = ½ DL), Naphthalene and PCP concentrations at each monitoring station over time. The May 2007 data are consistent with the trend (or lack thereof) in previous results, as shown on the plots of PCP and Naphthalene concentration versus time in Appendix D. The graphs in Appendix D use open markers labeled 'Not Detected' if the parameter was not detected at or above the method detection limit.

The 2008 monitoring program included additional monitoring of benzene, toluene, ethyl benzene and xylene, DRO, and PCDD/PCDF at monitoring wells 212, 213 and 220, and extended list PAHs at monitoring wells 215 and 220. The analytical results of this additional monitoring are summarized in Table 14. The reported concentrations are below the respective intervention limits specified for the additional parameters by EPA in the August 15, 2005 letter with the exception of DRO at well 213. Well 213 is approximately 25 feet from extraction well 408 and is within the capture zone of the OU1 extraction system. The PCP concentration in samples from well 212 and three of four samples from well 220 exceeded the intervention limit. The anthracene concentration in samples from well 220 slightly exceeds the intervention limit. Any groundwater that discharges into the channel must

travel through approximately 20 feet of high organic content wetland deposits and/or peat, which can be expected to adsorb these organic constituents.

### **3.2.2 OU2 – Containment Vault Operable Unit**

The results from the analysis of samples collected from the containment vault monitoring wells are summarized in Table 15. Carcinogenic PAH compounds and PCP were not detected in the samples. Trace concentrations of anthracene and acenaphthene (non-carcinogenic PAH compounds) were detected in some samples, but the detected concentrations are orders-of-magnitude below drinking water criteria.

The BaP Equivalency (ND = ½ DL), Naphthalene, and PCP concentrations in each well over time are shown in Table 16. Typical results are at or below the detection limits, and there is no indication of a trend of increasing concentrations in the samples from any of the wells.

### **3.2.3 OU3 – City Dump Pit Operable Unit**

The results from the analysis of samples collected in 2008 from the monitoring wells screened in the surficial aquifer at OU3 are summarized in Table 17. Concentrations of PAHs and PCP in samples collected from these monitoring wells are below their respective drinking water criteria except at wells 2106 and 2128, where the PCP concentrations in the samples from wells 2106 and 2128 are above the drinking water criterion.

Four dioxin/furan congeners were detected in the sample from 2106 (Table 17). 2,3,7,8-TCDD was not detected and the toxicity equivalency quotient for the sample is below the drinking water criterion. Well 2106 is located in the center of the 3 extraction wells, was in the product recovery program, and was added as a groundwater quality monitoring well in 2006 at the request of EPA. This well is expected to define the upper limit of contaminant concentrations at OU3.

Well 2128 is within the capture zone of the OU3 extraction system (Figures 4, 8 and 9), and the PCP concentrations are at or just above the intervention limit. It is assumed that PCP and PAH concentrations in samples from 2102, 2103, 2104 and 2105 would also exceed their respective drinking water criteria. These wells are located within the capture zone of the OU3 extraction system.

Results from the analysis of samples collected from wells screened at the base of the surficial aquifer at OU3 are summarized in Table 18. PCP was not detected in samples from wells 2233, 2234, and 2236. PAH compounds were not detected in the samples from well 2233, with two exceptions:

anthracene was detected in two of four samples, and 2-methylnaphthalene was detected in one of four samples. Trace amounts of certain PAH compounds were detected in the samples collected from well 2236, with phenanthrene, fluoranthene, and pyrene each being detected once. The reported concentrations are J-qualified because they are slightly above the method detection limit and below the method quantitation limit and are orders of magnitude below drinking water criteria.

For the samples from wells installed in 2008, PCP and PAH compounds were not detected in the sample from well 2228. PCP and certain PAH compounds were detected in the sample from well 2238. This well has a 1-foot screen that is located about 1-foot above the DNAPL impacted area. The PAH concentrations are below the respective drinking water criteria, and the PCP concentration is above the drinking water criterion but below the groundwater intervention limit.

Table 19 summarizes the results from the analysis of samples collected from wells screened in the lower aquifer at OU3. PCP was not detected in samples collected from wells screened in the lower aquifer. Trace concentrations of naphthalene were detected in samples collected from five of the seven wells screened in the lower aquifer including the upgradient monitoring well. The detected concentrations are orders of magnitude below drinking water criteria.

Table 20 summarizes the BaP Equivalency (ND =  $\frac{1}{2}$  DL), Naphthalene and PCP concentrations in each of the OU3 wells over time. The results from 2008 are consistent with historical results, as shown on the plots of concentration versus time in Appendix D.

The 2008 monitoring program included additional monitoring of benzene, toluene, ethyl benzene and xylene, DRO, and PCDD/PCDF at monitoring wells 2128, 2233, 2236 and 2336 and extended list PAHs at monitoring well 2128. New wells installed as a part of the NAPL investigation (wells 2228 and 2238) were sampled for the same additional parameters. The analytical results are summarized in Table 21. The reported concentrations are below the respective intervention limits specified for the additional parameters by EPA in the August 15, 2005 letter with the exception of DRO at well 2238,

### **3.2.4 OU1 and OU3 Extraction Wells**

The results from the analysis of the samples collected from the extraction wells at OU1 and OU3 are summarized in Table 22. Table 23 summarizes the PCP concentrations in extraction well samples over time. The 2008 water quality data are consistent with previous results, as shown by the plots of concentration versus time in Appendix D. The PCP concentration at well 408 was lower than

previous years and was not consistent with the PCP concentration in the duplicate sample. The PCP concentration in the duplicate sample is consistent with previous years. Quality control issues were identified for these samples (see Appendix A).

The 2008 monitoring program included additional monitoring for extended list PAH compounds at extraction well 409. The analytical results are in Table 24. Extended list PAH compounds were not detected in the sample.

### **3.2.5 Groundwater Treatment System**

The results from analysis of samples collected at the groundwater treatment system are summarized in Tables 25 and 26. Influent PCP concentrations ranged from 1,600 to 2,400 µg/L with an average concentration of approximately 1,770 µg/L. The GAC performance monitoring data (PCP concentration) is summarized in Table 25.

Monitoring of the effluent indicates that all parameters are below the respective effluent limitations specified for the treatment system (see table 26). The arsenic, chromium and copper concentrations are well below the effluent limitations and are within the range of concentrations reported for domestic wells in Cass County<sup>4</sup>. Benzene, ethyl benzene and xylene were not detected in any effluent sample. Toluene was detected (J-qualified) in four of twelve samples.

Flow rates and effluent pH were measured continuously at the treatment system effluent throughout the year. The monthly volume and effluent pH data are presented in Tables 27 and 28, respectively.

The flow rate and concentration data were used to estimate the mass of PCP and PAHs removed by the treatment system. The annual mass removed was relatively high for the first few years of operation, then declined and has remained fairly steady since about 1991. The estimated mass removed in 2008 is shown below:

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<sup>4</sup> MPCA Baseline Data Set (1992 – 1996), Ground Water Monitoring and Assessment Program (GWMAP), <http://www.pca.state.mn.us/water/groundwater/gwmap/gwbaseline.html>

Water Volume		PCP		PAHs	
2008 [10 <sup>6</sup> gallons]	Cumulative Total [10 <sup>6</sup> gallons]	2008 [kg]	Cumulative Total [kg]	2008 [kg]	Cumulative Total [kg]
61.3	1,207	447	12,397	772	5,552

### 3.2.6 Fish Hatchery Wells

The results from the analysis of the samples collected from the fish hatchery's four wells are summarized in Table 29. None of the monitoring parameters (including PCP) were detected in these samples. These analytical results are consistent with previous data (Table 30).

### 3.2.7 MDNR Well #11016

The results from the analysis of the samples collected from the wells identified as DNR #11016 are summarized in Table 31. PCP and PAH compounds were not detected in these samples with the exception of anthracene. Anthracene was detected at a trace concentration that is orders of magnitude below the drinking water criterion.

## 3.3 Vault Inspection

The containment vault was inspected on May 6 and November 7, 2008. Copies of the completed vault inspection forms are in Appendix C. The inspections did not identify any deficiencies.

### 3.3.1 Run-On and Runoff Control Systems

The run-on and runoff control systems were clear of debris. The systems contained adequate vegetation and no standing water or erosion was present. No deficiencies of the systems were noted.

### 3.3.2 Leachate Collection and Leak Detection Systems

Leachate was present in the leachate collection manhole (LCM) and leak detection manhole (LDM). The leachate elevations were recorded during the vault inspections and are summarized in Table 34. The LCM and LDM are covered and no damage to either manhole was noted. Vault dewatering activities are described in Section 3.4.

### **3.3.3 Benchmarks and Wells**

The monitoring wells, benchmarks and protective posts were not damaged and did not show signs of deterioration. Benchmarks were surveyed on May 23, 2008. The elevations are listed in Table 33 and are consistent with previous measurements. No settling of the vault contents is indicated by the elevation data.

The monitoring wells and protective posts were not damaged. The metal caps are in place and locked. No deficiencies were identified.

### **3.3.4 Security System**

The chain link fence and vehicle gate were not damaged, and no deficiencies in the security system were identified. The gate is locked when not attended.

### **3.3.5 Corrective Actions**

The inspections did not identify any deficiencies. No corrective actions were necessary in this time period.

## **3.4 Vault Dewatering Activities**

After vault closure in 1987, water levels indicated that the lower 14 feet of soil in the vault was water-saturated. This soil is continuing to release pore water and this water continues to accumulate at a slow rate in the collection system.

Vault dewatering activities were conducted in September 2008. Approximately 9,800 gallons of water were removed from the vault in accordance with the approved leachate disposal plan. The water was pumped to the groundwater treatment system. Flow meter readings and leachate elevations for this event are summarized in Table 34. The volume of leachate removed from the vault since the vault was closed in 1987 is shown in the following table.

Year	Volume [gallons]
1987 – 1988	1,216,000
1992	164,000
2001	129,500
2002	27,500

<b>Year</b>	<b>Volume [gallons]</b>
2003	17,100
2004	10,500
2005	10,700
2006	7,100
2007	3,500
2008	9,800 <sup>5</sup>
<b>Total</b>	<b>1,595,700</b>

Leachate elevations recorded over time are plotted on Figure 13. Each dewatering event is marked by a rapid lowering of the water level in the leachate collection system. The water levels show a rapid recovery period following dewatering followed by a slow, steady increase in water level. The rapid recovery is attributed to water within the drainage layer flowing to the collection system sump. The slow, steady increase is attributed to continued drainage of pore water from the previously water-saturated soils.

Leachate levels should continue to be monitored and leachate should continue to be removed from the vault.

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<sup>5</sup> Estimated volume based on time and pump capacity. Flow meter not working.

## **4.0 Summary**

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Monitoring at the Site in 2008 was completed in accordance with the requirements of the Orders and monitoring plans listed in Section 2.0. Any exceptions are described in this report. The monitoring results are summarized as follows:

- PCP and PAHs are the indicator chemicals from former operations at the Site.
- PCP and PAH concentrations in samples collected from wells screened in the upper aquifer at OU1 and located near the channel (i.e., 212, 215, 219, and 220) continue to show decreasing trends. PCP was detected ( $0.11 \text{ J } \mu\text{g/L}$ ) in one sample from well 213 and PAH concentrations meet drinking water criteria. PAH and PCP concentrations within the mapped contaminant plume continue to show varying concentrations.
- Intervention limits established for benzene, toluene, ethyl benzene, xylene, and benzo(a)pyrene were not exceeded at any of the monitoring wells. The intervention limit for PCP was exceeded in samples from wells 212, 218, and 220 at OU1. Two of the four samples collected at 220 did not exceed the intervention limit for PCP. The intervention limit for anthracene was exceeded in samples from wells 213 and 220.
- Extended-list PAHs were not detected in samples from the four monitoring wells that EPA specified for analysis (215, 220, 2128, 409) or the two wells installed and sampled in 2008 (2228 & 2238).
- PCP and PAH concentrations in all samples from the lower aquifer are below drinking water criteria. PCP was not detected in any sample from the lower aquifer. Only trace concentrations of certain PAHs were detected in samples from some of the wells. Most reported concentrations were estimated (J-qualified) because the concentrations were below the method quantitation limit but above the method detection limit or were orders of magnitude below drinking water criteria.
- PCP was not detected in the surface water samples collected from the channel connecting Cass Lake and Pike Bay.
- Carcinogenic PAHs were not detected in any vault monitoring well sample during 2007. Only trace concentrations of non-carcinogenic PAHs were detected in the samples from the

vault monitoring wells. The concentrations are orders of magnitude below drinking water criteria, are consistent with upgradient water quality data, and do not show a trend of increasing concentration.

- PCP and PAHs were not detected in samples from the fish hatchery wells.
- The groundwater treatment system effectively removed PCP and PAH compounds from the extracted groundwater at the Site. Effluent monitoring data demonstrate no exceedances of effluent limitation. Arsenic, copper and chromium concentrations were detected at concentrations typical of shallow groundwater. Benzene, ethyl benzene and xylene were not detected in the effluent samples. Toluene was detected (J-coded) in four of twelve samples. DRO was detected in four of twelve samples at a concentration very near the method detection limit and well below the effluent limit.
- The carbon treatment system has removed approximately 12,397 kg of PCP and 5,552 kg of PAH compounds from approximately 1.2 billion gallons of water over its operational lifetime.
- A total of approximately 165.8 gallons of product have been recovered over a 14-year period, including 5.5 gallons in 2008.
- Approximately 9,800 gallons of water were removed from the vault in 2007, bringing the total volume removed to approximately 1,595,700 gallons.
- Concentrations of PCP exceeded intervention limits for two of the down-gradient compliance wells for OU1 as defined by the US EPA in 2005 (W212 & W220). Well 212 is within the mapped capture zone of the extraction wells. The extraction wells continue to remove water with relatively high concentrations of PCP and PAH compounds. Concentrations initially dropped off after the first several years of system operation (circa. 1987-1990) for the OU1 and OU3 extraction systems; however, since then, the concentrations have remained stable at around 1000 to 9000 µg/L for many of the wells, indicating that a significant amount of contaminant source material remains. Since the extraction system began operating, the PCP concentrations in down-gradient monitoring wells (i.e., W212, W213, W215 and W220) have continued to decrease or are below the analytical detection limit, indicating that capture of contamination in the primary source area is being achieved.

## **5.0 Recommendations**

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1. Continue operating the groundwater extraction systems and groundwater treatment system in accordance with the Order, the MDNR water appropriation permit, the revised effluent monitoring plan, and the recommended 2009 monitoring plan (Section 6).
2. Continue monitoring water levels and water quality in accordance with the recommended 2009 monitoring plan (Section 6).
3. Maintain the extraction and groundwater treatment system components (i.e., pumps, valves, piping, flow meters) as necessary according to the *Operation and Maintenance Plan, St. Regis Paper Company Site, Cass Lake, Minnesota*, dated March, 1995, or the updated plan currently under development.
4. Continue monitoring and recovering product as described in the Free Product Recovery/Reuse Plan, April 1993.
5. Periodically pump water from the vault as it accumulates in the manholes. Record water levels during each vault inspection.

## **6.0 Monitoring Plan for 2009**

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This section presents the 2009 monitoring plan for monitoring activities at the St. Regis Paper Company Site. The monitoring plan will be reviewed and may be modified, as appropriate, in future annual reports.

### **6.1 Monitoring Activities**

#### **6.1.1 Capture Zone Confirmation**

The OU1 and OU3 groundwater extraction systems will continue to be operated as in previous years. The extraction system maintenance program, monitoring of extraction well performance and confirmation of the capture zone will be continued as detailed in the October 28, 2005 letter to EPA (summarized below).

##### **6.1.1.1 Extraction System Maintenance Plan**

International Paper will update the maintenance plan from the March 1995, Operating and Maintenance Plan to identify procedures to maintain the effectiveness of the extraction systems including well screen maintenance, pump maintenance or replacement, and pipe cleaning. The updated Extraction System Maintenance Plan will identify an optimal extraction rate for each extraction well or group of wells and allowable deviations from the optimal extraction rates (See letter to EPA date October 28, 2005).

Extraction well performance will be evaluated in the quarterly progress reports. This will include maintenance activities conducted during the quarter; monthly average extraction rates, water levels, and pressure gage readings for the appropriate monitoring points; and maintenance activities anticipated for the next quarter. Overall extraction well performance will continue to be summarized in each annual report.

EPA also requested that monthly rainfall data be reported. As was done in 2008, rainfall data will be downloaded from <http://climate.umn.edu/HIDradius/radius.asp>; Station: 211374 Cass Lake and included in the appropriate quarterly reports and in the annual report.

##### **6.1.1.2 Hydraulic Capture Zone Monitoring**

Water levels will be measured in the Site-wide network of piezometers and monitoring wells in the spring and fall. This information will be summarized in the 2009 annual report. Groundwater

elevation data at the monitoring points will be reviewed based on plots of previous trends and comparisons to nearby data points. Anomalous data will not be used in the capture zone analysis and the rationale for any exclusions will be provided on the data summary table in the annual report. Water levels will be used to develop maps of piezometric surface contours and estimated hydraulic capture zones, which along with the MODFLOW model (page 11); will be the basis for maps of piezometric surface contours and hydraulic capture zones included in the annual report.

The GW Contour software package (Waterloo Hydrogeologic, 2005) will be used to generate groundwater elevation contour maps for the surficial aquifer and lower aquifer using data from each set of water level measurements. GW Contour is a data interpolation and visualization tool that is used to create two-dimensional groundwater data models. A variety of interpolation schemes is available in GW Contour. The contour maps will be created using a natural neighbor algorithm. GW Contour will also be used to generate flow lines based on contoured head data.

The data input set for the GW Contour software package will be based on the 2009 water level measurements and on information from USGS topographic maps. The Site is part of a large sand plain with numerous lakes and wetlands in close contact with the surficial aquifer. Several of the lakes, including Cass Lake and Wolf Lake to the northwest of the Site, are connected to the Mississippi River, which drains the region. Some of the lakes and wetlands to the west are at elevations above the Mississippi River and connected lakes, and these higher water bodies provide some upgradient control on groundwater flow in the vicinity of the Site. Additional upgradient control on groundwater flow is provided by the recharge area northwest of the City of Cass Lake. Control points used in the GW Contour input files will be based on the regional groundwater flow model and gradients calculated between wells and between wells and lake elevations.

The measured water levels in the extraction wells are not considered to be valid with respect to the contouring of groundwater levels. However, it would also be inappropriate to simply ignore these wells. An algorithm was developed similar to the one described by Subterranean Research (July 2005) in their work on the Site for EPA (see Appendix E, Hydraulic Capture Zone Report, St. Regis Paper Company Site, Revised March 2008). This algorithm, or amendments to the algorithm, will be used to estimate the water elevation at the screen of each extraction well.

Hydraulic capture zones for both the OU1 and OU3 extraction systems will be delineated by starting stream traces nearby and downstream of the extraction wells and using the backward particle tracking

feature in GW Contour to define the traveled path. Flow lines located outside the hydraulic capture zones will be generated using a combination of forward and backward particle tracking.

#### **6.1.2 Containment Vault Postclosure Inspection**

The containment vault will be inspected during the second and third quarters of 2009 to evaluate the integrity of the vault components. Visual inspections will be documented on the observation reports. The benchmark elevations will be surveyed during the annual groundwater monitoring event. Leachate will be pumped from the vault to the groundwater treatment system, as needed.

#### **6.1.3 Water Quality Monitoring Plan**

Water quality monitoring stations at the Site include monitoring wells, extraction wells, surface water stations, and sample taps for the groundwater treatment system. Water quality sampling stations, with the exception of the sample taps, have been grouped into the following two categories: (1) performance-monitoring stations; and (2) indicator-monitoring stations. Performance-monitoring stations are sampled during even numbered years and the analytical data are used to verify long-term water quality trends and the performance of the remedial actions at the Site. Indicator-monitoring stations are sampled each year and the analytical data are used to evaluate potential changes in water quality trends. The stations and analytical parameters included in the 2009 monitoring plan are summarized in Tables 35 and 36, including quarterly sampling from selected monitoring wells.

#### **6.1.4 Effluent and GAC Performance Monitoring Plan**

Groundwater from the OU1 and OU3 extraction systems is treated prior to discharge to the channel connecting Cass Lake and Pike Bay. Vault leachate from OU2 is also pumped to the treatment system, as needed. The treatment system consists of three 20,000 pound granular activated carbon adsorbers connected in series. Sample taps are installed on the influent and effluent of each adsorber. The stations and analytical parameters included in the 2009 effluent and GAC performance monitoring plan are summarized in Table 37.

#### **6.1.5 Fish Tissue Samples**

Decisions regarding continued fish tissue monitoring will be based on the conclusions of the Human Health and Ecological Risk Assessment. Should EPA require a fish tissue monitoring program after approval of the Human Health and Ecological Risk Assessment, either this monitoring plan will be

supplemented to include the fish tissue monitoring program, or the required fish tissue monitoring will be conducted under another approved program.

## **6.2 Product Monitoring and Collection**

The stations and frequencies for product monitoring and collection for 2009 are summarized in Table 35. Accumulated product will be recovered after the annual groundwater quality monitoring event.

## **6.3 Reporting**

### **6.3.1 Quarterly Progress Report**

International Paper Company will continue to submit quarterly progress reports to the EPA that summarize the previous quarter's activities and activities anticipated for the following quarter.

Extraction well performance will continue to be evaluated in the quarterly progress reports including maintenance activities conducted during the quarter; monthly average extraction rates, and water levels collected during the quarter, monthly rainfall data; and will describe maintenance activities anticipated for the next quarter.

EPA also requested that monthly rainfall data be reported. Rainfall data will be downloaded from <http://climate.umn.edu/HIDradius/radius.asp>; Station: 211370 Cass Lake and included in the appropriate quarterly reports and in the annual report.

### **6.3.2 Annual Report**

International Paper Company will submit the 2009 Annual Report to the EPA on or before April 1, 2010. The annual report will summarize the remedial action operations and the monitoring activities conducted at the Site for 2009, and make recommendations for the 2010 monitoring plan. The data summary tables will include the intervention limits and effluent limitations specified in the August 15, 2005 EPA letter.

Water levels from the network of piezometers and monitoring wells will be used to develop maps of piezometric surfaces and hydraulic capture zones. The groundwater elevation at each well will be plotted on each map so the reviewer can compare the contour lines to the measured elevations.

Documents and manifests regarding the handling of spent carbon from the groundwater treatment system will be appended to the annual report.

## ***Tables***

**Table 1**  
**2008 Annual Monitoring Event Summary**  
**Groundwater and Surface Water Monitoring**  
**St. Regis Paper Company and City Dump Pit Sites**

Operable Unit	Screened Interval	Station	Category	PCP		PAHs		BETX	DRO	Dioxins	Water Level (1)
				8270	8151	8270	8270-SIM (Calif.)				
OU1-Treating Facility Area	Top of Surficial	W104	P		X		X				X
		W105R	P		X		X				X
		W112	P		X		X				X
		W114	I		X		X				X
		W115	I		X		X				X
		W118	PMC								X
	Bottom of Surficial	W205	P		X		X				X
		W209	P		X		X				X
		W212 <sup>(2)</sup>	I								2
		W213 <sup>(2)</sup>	I								X
		W215	I		X		X X				X
		W217	P		X		X				X
		W218	P		X		X				X
		W219	P		X		X				X
		W220 <sup>(2)</sup>	I					X			X
		W221	P		X		X				X
	Lower Aquifer	W222									X
		W223									X
		MW3	P		X		X				X
	Lower Aquifer	W302	P		X		X				X
		W306	I		X		X				X
		W401	P	X			X				X
	Pump-out Wells	W402	P	X			X				X
		W403	P	X			X				X
		W404									X
		W405	P	X			X				X
		W406	P		X		X				X
		W407	P		X		X				X
		W408	I	X			X				X
		W409	P	X			X X				X
		W410	P	X			X				X
		W411	P		X		X				X
	Observation Wells	W509									X
		W510									X
		W511									X
		W512									X
		W513									X
		W514									X
	Special Observation Wells	SO401	PMC								X
		SO402									X
		SO403									X
		SO405									X
	Channel	CL-N	I		X						
		CL-S	I		X						
		North Staff									X
		RR Staff									X
		South Staff									X
Off-site	Top of Surficial	DNR #11016			X		X				X

**Table 1**  
**2008 Annual Monitoring Event Summary**  
**Groundwater and Surface Water Monitoring**  
**St. Regis Paper Company and City Dump Pit Sites**

Operable Unit	Screened Interval	Station	Category	PCP		PAHs		8270-SIM (Calif.)	BETX	DRO	Dioxins	Water Level (1)
				8270	8151	8270	8270-SIM					
OU2 - Containment Vault Area	Upper Aquifer	W124	I		X		X					X
		W125	I		X		X					X
		W126	I		X		X					X
		W127	P		X		X					X
		W128	I		X		X					X
		W129	I		X		X					X
		W130	I		X		X					X
OU3 - City Dump Pit Area	Top of Surficial	W2102	PMC									X
		W2103	PMC									X
		W2104	PMC									X
		W2105	PMC									X
		W2106	PMC	X		X					X	X
		W2127	I		X		X					X
		W2128 <sup>(2)</sup>	P					X				X
		W2129	I		X		X					X
		W2134	P		X		X					X
	Bottom of Surficial	W2228	I		X		X	X	X	X	X	X
		W2233 <sup>(2)</sup>										X
		W2234	I		X		X					X
		W2236 <sup>(2)</sup>										X
	Lower Aquifer	W2237										
		W2238	I		X		X	X	X	X	X	X
		W2301	P		X		X					X
		W2325	P		X		X					X
		W2326	P		X		X					X
		W2329	P		X		X					X
		W2333	P		X		X					X
	Pump-out Wells	W2335	I		X		X					X
		W2336 <sup>(2)</sup>										X
		W2401	P	X		X						X
	Scavenger Wells	W2402	P	X		X						X
		W2403	P	X		X						X
		S2401	PMC									X
	Observation Wells	S2402	PMC									X
		S2403	P									X
		W2501										X
		W2502										X
	Additional Wells	W2504										X
		W2505										X
		Fish 1			X		X					
		Fish 2			X		X					
		Fish 3			X		X					
		Fish 4	I		X		X					

**Table 1**  
**2008 Annual Monitoring Event Summary**  
**Groundwater and Surface Water Monitoring**  
**St. Regis Paper Company and City Dump Pit Sites**

Operable Unit	Screened Interval	Station	Category	PCP	PAHs		BETX	DRO	Dioxins	Water Level (1)
				8270	815*	8270	8270-SIM (Calif.)	8260	8015M	

**Notes:**

This table identifies the number of samples at each station over the year.

(1) Water levels will be measured in during the spring and fall sampling event.

(2) See Quarterly Sample Program (Table 2)

**Category**

I - Indicator Monitoring Station (Annual Sampling)

P - Performance Monitoring Station (Biennial Sampling)

PMC - Product Monitoring and Collection Station

**Table 2**  
**2008 Quarterly Monitoring Event Summary**  
**Groundwater and Surface Water Monitoring**  
**St. Regis Paper Company and City Dump Pit Sites**

Operable Unit	Screened Interval	Station	Category	PCP		PAHs		BETX	DRO	Dioxins	Water Level
				8270	8151	8270	8270-SIM (Calif.)	8260	8015M	8290	
OU1- Treating Facility Area	Bottom of Surficial	W212	I		X		X		X	X	X
		W213	I		X		X		X	X	X
		W220	I	X		X		X	X	X	X
OU3 - City Dump Pit Site	Top of Surficial	W2128	P		X		X		X	X	X
	Bottom of Surficial	W2233			X		X		X	X	X
		W2236			X		X		X	X	X
		Lower Aquifer			X		X		X	X	X

**Notes:**

This table identifies the number of samples at each station over the year.

(1) Number of QC samples as follows:

PCP - 5%

PAH - 5%

BETX - 10%

DRO - 10%

Dioxins - 10%

**Category**

I - Indicator Monitoring Station (Annual Sampling)

P - Performance Monitoring Station (Biennial Sampling)

PMC - Product Monitoring and Collection Station

**Table 3**  
**2008 Monthly Monitoring Event Summary**  
**Effluent and GAC Performance Monitoring Program**  
**St. Regis Paper Company and City Dump Pit Sites**

Month	PCP				PAHs	Metals <sup>(A)</sup> 6020; 7195/6010B	BETX 8620	DRO 8015B	Dioxins/furans 8290
	8151M		8270-SIM						
	Influent	Primary	Secondary	Effluent	Effluent	Effluent	Effluent	Effluent	Effluent
January	X	X	X	X	X	X	X	X	
February	X	X	X	X	X	X	X	X	X
March	X	X	X	X	X	X	X	X	
April	X	X	X	X	X	X	X	X	
May	X	X	X	X	X	X	X	X	X
June	X	X	X	X	X	X	X	X	
July	X	X	X	X	X	X	X	X	
August	X	X	X	X	X	X	X	X	X
September	X	X	X	X	X	X	X	X	
October	X	X	X	X	X	X	X	X	
November	X	X	X	X	X	X	X	X	X
December	X	X	X	X	X	X	X	X	

**Notes:**

(A) Arsenic, Copper, & Chromium. If chromium exceeds 11 µg/L in any effluent sample, additional effluent samples will be collected and analyzed for hexavalent and trivalent chromium.

(B) One trip blank per event when BETX samples are collected.

Flow rate and pH are measured continuously.

Numbers indicate the number of samples during each event.

**Table 4 - Comprehensive List of Monitoring Wells - 2008 Update**  
**St. Regis Paper Company Site**

Well Identification	Date Installed	Elevations [ft. MSL, NAVD 88]					Screen Dimensions		Construction Materials		Location		Year Abandoned	Reason for Abandonment
		Riser Pipe	Protective Casing	Ground Surface	Top of Screen	Bottom of Screen	Length	Diameter	Casing	Screen	Northing	Easting		
<b>OU1- Treating Facility Area</b>														
Top of Surficial Aquifer														
101	01/26/82	1319.66		1318.1	1305.1	1295.1	10	4	Galvanized	Galvanized			1987	No longer required by monitoring program
102	01/27/82	1320.32		1318.6	1301.1	1291.1	10	4	Galvanized	Galvanized			1987	No longer required by monitoring program
103	01/27/82	1317.79		1315.4	1190.4	1293.4	10	4	Galvanized	Galvanized			1987	No longer required by monitoring program
104	01/27/82	1319.14	1319.64	1316.76	1306.3	1296.3	10	4	Galvanized	Galvanized	5248257.17	379466.64		
105	07/12/84	1306.67	1307.16	1305.18	1302.2	1292.2	10	4	Galvanized	Galvanized	5248324.80	379826.43	2007	Well collapsed and was replaced by W105R.
105R	02/15/07	1306.86	1307.51	1305.3	1290.3	1280.3	10	2	Black Steel	Stainless Steel	5248326.31	379825.72		
106	01/27/82	1306.46		1305.1	1296.6	1286.6	10	4	Galvanized	Galvanized			1987	No longer required by monitoring program
107	01/27/82	1305.83		1304.7	1298.7	1288.7	10	4	Galvanized	Galvanized			1987	No longer required by monitoring program
108	01/26/82	1306.12		1304.8	1299.8	1289.8	10	4	Galvanized	Galvanized			1987	No longer required by monitoring program
109	01/26/82	1308.50		1307.2	1299.7	1289.7	10	4	Galvanized	Galvanized			1987	No longer required by monitoring program
110	01/26/82	1319.55		1318.2	1306.2	1296.2	10	4	Galvanized	Galvanized			1987	No longer required by monitoring program
111							10	4	Galvanized	Galvanized			1987	No longer required by monitoring program
112	07/15/83	1305.77	1306.41	1304.53	1301.5	1291.5	10	4	Galvanized	Galvanized	5248206.97	379977.50		
113	07/14/83	1304.72		1302.5	1299.5	1289.5	10	4	Galvanized	Galvanized	5248094.00	380010.83	2006	No longer required by monitoring program
114	07/14/83	1307.67	1308.18	1305.99	1292.0	1292.0	10	4	Galvanized	Galvanized	5248002.09	379933.88		
115	07/12/84	1307.27	1307.71	1305.46	1302.5	1292.5	10	4	Galvanized	Galvanized	5248253.90	380101.53		
116	07/12/84	1306.27		1304.9	1300.4	1290.4	10	4	Galvanized	Galvanized			1987	No longer required by monitoring program
118	12/29/84	1320.02	1321.88	1319.51	1308.5	1298.5	10	2	Stainless Steel	Stainless Steel	5248256.62	379323.75		
Bottom of Surficial Aquifer														
202	07/11/84	1321.00		1319.1	1291.1	1286.0	5	2	Stainless Steel	Stainless Steel			1987	No longer required by monitoring program
205	07/10/84	1307.95	1307.93	1305.33	1258.3	1253.3	5	2	Stainless Steel	Stainless Steel	5248325.52	379829.73		
207	07/17/83	1306.82		1304.7	1259.2	1208.8	5	2	Stainless Steel	Stainless Steel			1987	No longer required by monitoring program
209	05/10/85	1311.52	1311.57	1309.25	1273.8	1268.8	5	3	Stainless Steel	Stainless Steel	5248117.27	379582.79		
212	11/04/83	1305.94	1306.06	1303.73	1251.2	1246.2	5	2	Stainless Steel	Stainless Steel	5248204.11	379976.44		
213	11/03/83	1307.45	1307.77	1304.51	1252.0	1242.0	5	2	Stainless Steel	Stainless Steel	5248095.86	380009.34		
214	11/01/83	1306.03		1303.5	1251.0	1246.0	5	2	Stainless Steel	Stainless Steel			1987	No longer required by monitoring program
215	07/12/84	1308.84	1308.86	1306.64	1255.6	1249.6	5	2	Stainless Steel	Stainless Steel	5248256.71	380102.47		
217	11/30/84	1307.56	1307.63	1305.50	1256.5	1251.5	5	2	Stainless Steel	Stainless Steel	5248319.77	380874.95		
218	12/29/84	1320.96	1321.98	1319.48	1288.5	1283.5	5	2	Stainless Steel	Stainless Steel	5248253.46	379323.77		
219	07/09/85	1308.45	1308.59	1306.75	1247.3	1242.3	5	2	Stainless Steel	Stainless Steel	5248296.01	380286.53		
220	02/23/94	1305.79	1305.89	1303.71	1245.7	1235.7	10	2	Stainless Steel	Stainless Steel	5248005.76	380087.45		
221	01/05/94	1310.55	1310.66	1308.75	1284.3	1264.3	10	2	Stainless Steel	Stainless Steel	5248463.65	380804.63		
222	02/16/07	1305.47	1305.60	1303.84	1257.8	1252.8	5	2	Black Steel	Stainless Steel	5248415.99	379738.06		
222T	05/15/06	1306.10	—	1303.24	1286.9	1283.9	3	2	Stainless Steel	Black Steel	5248416.70	379741.93	2007	Temporary drive point. Replaced by W222
223	05/01/06	1333.26	1333.55	1330.64	1271.6	1266.6	5	2	Stainless Steel	Black Steel	5247750.78	379578.74		
Lower Aquifer														
MW3	12/22/36	1324.84	1324.95	1323.16	1223.2	1213.2	15	12	Steel	Bronze	5248325.87	378910.46		2006 Survey coordinates not correct
302	02/17/82	1321.98	1322.36	1320.81	1217.3	1207.3	10	4	Galvanized	Galvanized	5248323.17	379139.12		
306	02/18/82	1308.47	1308.95	1307.93	1208.9	1198.9	10	4	Galvanized	Galvanized	5248232.74	379807.03		
Pump-out Wells														
401	11/05/85	1321.51	1321.54	1319.68	1294.7	1284.7	10	6	Black Steel	Stainless Steel	5248244.31	379310.40		
402	11/06/85	1309.33	1309.34	1307.61	1280.6	1265.6	15	6	Black Steel	Stainless Steel	5248143.67	379676.46		
403	11/14/85	1310.82	1310.83	1308.16	1273.2	1258.2	15	6	Black Steel	Stainless Steel	5248235.06	379806.88		
404	11/18/85	1309.13	1309.20	1307.14	1292.1	1277.1	15	6	Black Steel	Stainless Steel	5248205.74	379800.07		
405	10/30/85	1309.85	1309.87	1307.32	1272.3	1257.3	15	6	Black Steel	Stainless Steel	5248144.44	379787.41		
406	11/20/85	1308.64	1308.71	1307.20	1292.2	1277.2	15	6	Black Steel	Stainless Steel	5248084.43	379776.57		
407	11/21/85	1307.64	1307.71	1306.82	1274.8	1259.8	15	6	Black Steel	Stainless Steel	5248058.84	379770.13		
408	11/12/85	1306.16	1306.22	1304.43	1264.4	1244.4	20	6	Black Steel	Stainless Steel	5248102.94	380007.10		
409	11/14/85	1308.33	1308.31	1306.14	1271.1	1256.1	15	6	Black Steel	Stainless Steel	5248174.57	379795.23		
410	11/19/85	1310.84	1310.88	1306.89	1271.9	1256.9	15	6	Black Steel	Stainless Steel	5248114.73	379783.65		
411	08/04/87	1311.45	1311.89	1310.14	1273.1	1258.1	15	6	Black Steel	Stainless Steel	5248264.67	379764.41		

Vertical Datum for Existing Wells: NAVD 88

Vertical datum for abandoned wells is approximately 1.9 feet lower than NAVD 88

2311005\Table 4 (2008 Update)

**Table 4 - Comprehensive List of Monitoring Wells - 2008 Update**  
**St. Regis Paper Company Site**

Well Identification	Date Installed	Elevations [ft. MSL, NAVD 88]					Screen Dimensions		Construction Materials		Location		Year Abandoned	Reason for Abandonment
		Riser Pipe	Protective Casing	Ground Surface	Top of Screen	Bottom of Screen			Casing	Screen	Northing	Easting		
<b>Observation Wells</b>														
501	11/05/86	1308.59	1308.71	1305.2	1302.4	1281.9	20.5	2	Stainless Steel	Stainless Steel	5248220.33	379803.15	2006	Replaced by piezometer 509
502	11/07/86	1307.27	1307.42	1304.1	1301.1	1280.6	20.5	2	Stainless Steel	Stainless Steel	5248190.04	379797.46	2006	Replaced by piezometer 510
503	11/07/86	1308.63	1308.66	1305.1	1302.1	1281.6	20.5	2	Stainless Steel	Stainless Steel	5248159.52	379791.14	2006	Replaced by piezometer 511
504	11/07/86	1309.49	1309.58	1306.1	1302.0	1281.5	20.5	2	Stainless Steel	Stainless Steel	5248129.14	379784.61	2006	Replaced by piezometer 512
505	11/05/86	1308.53	1308.58	1305.2	1302.9	1282.4	20.5	2	Stainless Steel	Stainless Steel	5248099.65	379779.68	2006	Replaced by piezometer 513
506	11/07/86	1307.78	1307.86	1304.3	1301.8	1281.3	20.5	2	Stainless Steel	Stainless Steel	5248071.47	379773.28	2006	Replaced by piezometer 514
507	11/07/86	1306.88	1306.94	1303.2	1300.7	1280.2	20.5	2	Stainless Steel	Stainless Steel	5248156.34	379805.97	2006	Replaced by piezometer 511
508	11/07/86	1307.08	1307.22	1303.7	1300.8	1280.2	20.5	2	Stainless Steel	Stainless Steel	5248126.57	379799.68	2006	Replaced by piezometer 512
509	05/08/06	1310.09	1310.31	1307.44	1267.4	1262.4	5	2	Stainless Steel	Black Steel	5248228.77	379805.72		
510	05/08/06	1308.52	1309.15	1306.11	1267.1	1262.1	5	2	Stainless Steel	Black Steel	5248192.63	379797.85		
511	05/07/06	1309.73	1310.05	1306.49	1266.5	1261.5	5	2	Stainless Steel	Black Steel	5248162.30	379791.90		
512	05/07/06	1309.55	1309.83	1306.03	1261.0	1256.0	5	2	Stainless Steel	Black Steel	5248121.43	379784.59		
513	05/06/06	1308.41	1308.62	1305.72	1266.7	1261.7	5	2	Stainless Steel	Black Steel	5248094.67	379780.57		
514	05/06/06	1309.36	1309.72	1306.39	1265.4	1260.4	5	2	Stainless Steel	Black Steel	5248065.72	379773.26		
<b>Special Observation Wells</b>														
S401	09/18/87	1320.74	1320.92	1319.72	1306.7	1296.7	10	2	Black Steel	Black Steel	5248244.47	379310.10		
S402	09/17/87	1308.53	1309.45	1307.62	1298.6	1288.6	10	2	Black Steel	Black Steel	5248144.03	379676.57		
S403	09/18/87	1309.27	1309.43	1308.32	1305.3	1295.3	10	2	Black Steel	Black Steel	5248235.40	379807.05		
S405	09/18/87	1308.15	1308.33	1307.21	1304.2	1297.2	10	2	Black Steel	Black Steel	5248144.60	379787.75		
<b>OU2 - Vault Area</b>														
<b>Vault Monitoring Wells</b>														
111	01/27/82	1329.41		1327.9	1305.9	1295.9	10	4	Galvanized	Galvanized			1987	Replaced by permanent monitoring wells at the vault
121	04/02/86	1324.13		1321.6	1307.0	1396.7	10	2	Stainless Steel	Stainless Steel			1987	Replaced by permanent monitoring wells at the vault
122	04/01/86	1331.90		1329.1	1307.4	1287.1	10	2	Stainless Steel	Stainless Steel			1987	Replaced by permanent monitoring wells at the vault
123	04/02/86	1335.67		1332.6	1308.8	1298.5	10	2	Stainless Steel	Stainless Steel			1987	Replaced by permanent monitoring wells at the vault
124	07/28/87	1332.59	1333.00	1331.07	1314.1	1299.1	15	6	Black Steel	Stainless Steel	5247810.20	378417.34		
125	07/27/87	1332.14	1332.61	1330.26	1314.3	1299.3	15	6	Black Steel	Stainless Steel	5247820.51	378462.16		
126	07/29/87	1331.41	1331.87	1329.52	1309.0	1294.0	15	6	Black Steel	Stainless Steel	5247639.04	378494.14		
127	07/30/87	1328.06	1328.62	1326.36	1308.4	1293.4	15	6	Black Steel	Stainless Steel	5247649.72	378551.45		
128	08/03/87	1325.85	1326.30	1324.04	1305.0	1290.0	15	6	Black Steel	Stainless Steel	5247694.97	378578.35		
129	08/12/92	1328.85	1329.17	1327.03	1312.0	1297.0	15	6	Black Steel	Stainless Steel	5247755.44	378581.58		
130	08/12/92	1334.80	1335.16	1332.90	1313.9	1298.9	15	6	Black Steel	Stainless Steel	5247694.75	378392.35		

Vertical Datum for Existing Wells: NAVD 88

Vertical datum for abandoned wells is approximately 1.9 feet lower than NAVD 88

2311005\Table 4 (2008 Update)

**Table 4 - Comprehensive List of Monitoring Wells - 2008 Update**  
**St. Regis Paper Company Site**

Well Identification	Date Installed	Elevations [ft. MSL, NAVD 88]					Screen Dimensions		Construction Materials		Location		Year Abandoned	Reason for Abandonment			
		Riser Pipe	Protective Casing	Ground Surface	Top of Screen	Bottom of Screen	Length	Diameter	Casing	Screen	Northing	Easting					
<b>OU3 - City Dump Pit Area</b>																	
Top of Surficial Aquifer																	
2101	11/27/84	1321.79		1319.2	1307.2	1297.2	10	2	Stainless Steel	Stainless Steel				Abandoned	No longer required by monitoring program		
2102	11/27/84	1318.79	1318.78	1316.01	1306.5	1296.5	10	2	Stainless Steel	Stainless Steel	5247446.51	379006.99					
2103	11/28/84	1320.28	1320.30	1317.59	1308.1	1298.1	10	2	Stainless Steel	Stainless Steel	5247416.57	378997.94					
2104	11/28/84	1319.48	1319.49	1316.68	1308.2	1298.2	10	2	Stainless Steel	Stainless Steel	5247412.15	378969.27					
2105	01/03/85	1322.90	1323.86	1321.36	1307.9	1297.9	10	2	Stainless Steel	Stainless Steel	5247357.21	378986.31					
2106	01/03/85	1309.76	1310.21	1309.09	1306.6	1296.0	10	2	Stainless Steel	Stainless Steel	5247416.84	379049.81					
2125	02/13/85	1316.90		1315.0	1307.0	1297.0	10.1	2	Stainless Steel	Stainless Steel				Abandoned	No longer required by monitoring program		
2126	02/14/85	1319.24		1317.8	1306.3	1296.3	10.2	2	Stainless Steel	Stainless Steel				Abandoned	No longer required by monitoring program		
2127	02/19/85	1306.71	1306.72	1303.95	1272.5	1267.5	5.1	2	Stainless Steel	Stainless Steel	5247295.90	379040.90					
2128	02/18/85	1305.08	1306.39	1304.23	1284.7	1279.7	5.1	2	Stainless Steel	Stainless Steel	5247344.42	379081.45					
2129	02/19/85	1307.36	1307.40	1304.03	1296.0	1291.0	5.1	2	Stainless Steel	Stainless Steel	5247292.26	379153.73					
2133	05/09/85	1318.11		1314.7	1303.2	1295.2	10	2	Stainless Steel	Stainless Steel				Abandoned	No longer required by monitoring program		
2134	04/21/86	1313.21	1313.33	1310.92	1305.9	1295.9	10	2	Stainless Steel	Stainless Steel	5247433.01	379125.44					
2135	03/25/86	1317.29	1317.38	1314.56	1307.1	1297.1	10	2	Stainless Steel	Stainless Steel	5247435.95	379201.62					
Bottom of Surficial Aquifer																	
2201	02/13/85	1321.90		1319.5	1275.5	1270.5	5	2	Stainless Steel	Stainless Steel				Abandoned	No longer required by monitoring program		
2226	05/06/85	1319.44		1317.3	1276.3	1271.3	5	2	Stainless Steel	Stainless Steel				Abandoned	No longer required by monitoring program		
2228	03/04/88	1306.94		1304.45	1242.5	1237.5	5	2	Black Steel	Stainless Steel	5247342.32	379080.64					
2233	05/04/06	1319.56	1320.02	1317.01	1283.0	1278.0	5	2	Stainless Steel	Black Steel	5247489.73	379014.49					
2234	02/21/87	1312.97	1313.34	1311.38	1272.9	1267.9	5	2	Stainless Steel	Stainless Steel	5247432.73	379127.90					
2236	05/09/06	1328.87	1329.31	1326.41	1292.4	1287.4	5	2	Stainless Steel	Black Steel	5247344.85	378948.27					
2237	03/03/08	1307.41		1304.68	1176.7	1171.7	5	2	Black Steel	Stainless Steel	5247328.12	379005.21			To be replaced in 2009 due to impacts of grout.		
2238	03/05/08	1306.87		1303.33	1237.8	1236.8	1	2	Black Steel	Stainless Steel	5247361.47	379042.76					
Lower Aquifer Wells																	
2301	02/12/85	1323.78	1323.82	1321.65	1252.7	1247.7	5.1	2	Stainless Steel	Stainless Steel	5247542.05	378910.30					
2325	05/07/85	1318.97	1319.17	1316.77	1242.8	1237.8	5	2	Stainless Steel	Stainless Steel	5247464.07	378859.32					
2326	05/04/85	1321.51	1321.54	1319.59	1221.6	1216.6	5	2	Stainless Steel	Stainless Steel	5247360.42	378889.88					
2329	02/22/94	1306.18	1306.55	1304.02	1245.0	1235.0	10	2	Stainless Steel	Stainless Steel	5247298.19	379162.20					
2333	05/09/85	1319.13	1319.20	1318.03	1243.0	1238.0	5	2	Stainless Steel	Stainless Steel	5247490.59	379012.97					
2335	04/26/85	1315.61	1315.48	1313.66	1191.7	1181.7	10	4	Black Steel	Stainless Steel	5247434.32	379197.81					
2336	04/26/85	1328.74	1329.14	1326.15	1231.2	1226.2	5	2	Black Steel	Stainless Steel	5247344.21	378946.67					
Pump-out Wells																	
2401	08/07/87	—	1313.40	1311.72	1296.2	1276.2	20	12	Black Steel	Stainless Steel	5247440.78	379028.60					
2402	08/06/87	—	1310.74	1308.87	1295.9	1275.9	20	12	Black Steel	Stainless Steel	5247411.40	379086.14					
2403	08/07/87	—	1308.39	1306.80	1286.8	1266.8	20	12	Black Steel	Stainless Steel	5247390.20	379029.79					
Special Observation Wells																	
S2401	08/07/87	—	1313.42	1311.92	1305.9	1297.9	8	24	Black Steel	Galvanized	5247440.91	379029.69					
S2402	08/05/87	—	1310.83	1309.71	1303.7	1295.7	8	24	Black Steel	Galvanized	5247412.53	379086.46					
S2403	08/07/87	—	1307.88	1306.33	1302.3	1294.3	8	24	Black Steel	Galvanized	5247390.45	379030.63					
Observation Wells																	
2501	09/15/87	1314.40	1314.59	1313.08	1306.1	1291.1	15	2	Galvanized	Stainless Steel	5247466.37	379029.49					
2502	09/16/87	1310.58	1310.71	1309.79	1308.8	1293.8	15	2	Galvanized	Stainless Steel	5247416.16	379060.02					
2503	09/17/87	1305.28	1305.26	1304.9	1303.1	1288.1	15	2	Galvanized	Stainless Steel	5247367.41	379027.77	2006		Screened across wetland deposit. Replaced by 2505.		
2504	09/18/87	1311.45	1312.26	1310.46	1307.5	1292.5	15	2	Galvanized	Stainless Steel	5247415.35	379031.16					
2505	5/3/206	1307.16	1307.59	1304.78	1250.8	1245.8	5	2	Stainless Steel	Black Steel	5247371.99	379026.10					
DNR Well																	
11016	—	1323.96	—	1322.13	1301.9	1299.9	2	2	Stainless Steel	Black Steel	5248352.02	379270.03					

Vertical Datum for Existing Wells: NAVD 88

Vertical datum for abandoned wells is approximately 1.9 feet lower than NAVD 88

2311005 Table 4 (2008 Update)

**Table 5**  
**Summary of Groundwater Extraction Rate and Precipitation**  
**St. Regis Paper Company Site**

Month	OU1										OU3			Extraction System [gpm]	Precipitation [inches]
	401 [gpm]	402 [gpm]	403 [gpm]	404 [gpm]	405 [gpm]	406 [gpm]	407 [gpm]	408 [gpm]	409 [gpm]	410 [gpm]	2401 [gpm]	2402 [gpm]	2403 [gpm]		
Jan-08	5.2	5.5	5.5	0.0	10.6	10.2	10.8	4.6	15.1	5.2	7.6	14.5	20.6	115.4	0.03
Feb-08	5.2	5.2	6.9	0.0	9.8	10.9	10.5	4.9	12.9	5.7	6.7	14.9	20.7	114.3	0.44
Mar-08	5.4	5.6	6.6	0.0	8.9	10.2	10.1	4.7	10.7	5.4	6.5	15.0	20.2	109.3	0.33
Apr-08	5.5	5.7	6.4	0.0	9.0	5.0	9.7	4.8	7.4	5.0	6.7	14.8	20.3	100.3	4.34
May-08	5.4	5.5	6.3	0.0	15.9	7.3	9.5	4.8	11.6	4.7	6.6	14.9	20.3	112.8	1.68
Jun-08	5.5	5.4	6.2	0.0	20.3	10.5	10.8	4.9	16.1	5.6	6.3	15.1	19.4	126.1	4.07
Jul-08	5.5	5.2	6.1	0.0	19.1	10.2	10.5	4.9	16.8	5.6	5.4	15.1	15.2	119.6	4.45
Aug-08	5.6	5.5	6.1	0.0	19.1	9.2	10.8	4.9	17.3	5.6	5.0	14.8	21.1	125.0	0.60
Sep-08	5.6	5.4	6.1	0.0	18.8	4.5	11.0	4.6	16.6	5.0	3.3	16.7	17.8	115.4	3.62
Oct-08	5.9	5.3	6.1	0.0	19.9	11.0	10.3	4.7	17.0	3.6	9.2	16.5	13.2	122.7	6.14
Nov-08	5.8	5.2	6.3	0.0	19.5	11.0	7.8	3.6	16.2	3.0	8.9	16.5	13.3	117.1	1.68
Dec-08	5.9	5.4	6.5	0.0	20.2	8.7	5.7	3.8	16.8	6.0	6.9	16.9	14.3	117.1	1.42

**Table 6**  
**Routine Parameter List and Method Reporting Limits**  
**St. Regis Paper Company Site**

Analyte	CAS Number	SW-846 Method 8270 [ $\mu\text{g/L}$ ]		SW-846 Method 8270-SIM [ $\mu\text{g/L}$ ]	
		Method Reporting Limit	Method Detection Limit <sup>(1)</sup>	Method Reporting Limit	Method Detection Limit <sup>(1)</sup>
<b>PAHs</b>					
2-Methylnaphthalene	91-57-6	10	0.239	0.02	0.003
Acenaphthene	83-32-9	10	0.281	0.02	0.002
Acenaphthylene	208-96-8	10	0.236	0.02	0.002
Anthracene	120-12-7	10	0.612	0.02	0.002
Benz[a]anthracene	56-55-3	10	0.591	0.02	0.003
Benzo[a]pyrene	50-32-8	10	0.654	0.02	0.002
Benzo[b]fluoranthene	205-99-2	10	0.584	0.02	0.002
Benzo[ghi]perylene	191-24-2	10	0.812	0.02	0.004
Benzo[k]fluoranthene	207-08-9	10	0.827	0.02	0.002
Chrysene	218-01-9	10	0.787	0.02	0.002
Dibenz[a,h]anthracene	53-70-3	10	0.752	0.02	0.002
Fluoranthene	206-44-0	10	0.652	0.02	0.003
Fluorene	86-73-7	10	0.323	0.02	0.003
Indeno[1,2,3-cd]pyrene	193-39-5	10	0.684	0.02	0.003
Naphthalene	91-20-3	10	0.365	0.02	0.004
Phenanthrene	85-01-8	10	0.482	0.02	0.004
Pyrene	129-00-0	10	0.731	0.02	0.003
Pentachlorophenol	87-86-5	25	2.44	1	0.095
<b>SW-846 Method 8151 [<math>\mu\text{g/L}</math>]</b>					
Pentachlorophenol	87-86-5	0.5	0.095		

**Notes:**

CAS - Chemical Abstracts Service  
PCDD - polychlorinated dibenzo-*p*-dioxin  
PCDF - polychlorinated dibenzofuran  
NA - not applicable

<sup>(1)</sup> Method detection limits are subject to change based on the laboratory's MDL study schedule.

**Table 7**  
**Additional Parameter List and Method Reporting Limits**  
**St. Regis Paper Company Site**

Analyte	CAS Number	Method Reporting Limit	Method Detection Limit <sup>(1)</sup>
<b>Extended-list PAHs</b>		<b>SW-846 Method 8270-SIM [µg/L]</b>	
Benzo(j)fluoranthene		0.02	0.0035
Dibenz(a,j)acridine		0.02	0.0029
Dibenz(a,h)acridine		0.02	0.0029
7H-Dibenzo(c,g)carbazole		0.02	0.0013
Dibenzo(a,e)pyrene		0.02	0.0019
Dibenzo(a,h)pyrene		0.02	0.0014
Dibenzo(a,i)pyrene		0.02	0.053
Dibenzo(a,l)pyrene		0.02	0.0015
7,12-Dimethylbenzanthracene		0.02	0.0015
1,6-Dinitropyrene		0.05	0.0076
1,8-Dinitropyrene		0.05	0.0032
3-Methylcholanthrene		0.02	0.0027
5-Methylchrysene		0.02	0.0014
5-Nitroacenaphthene		0.02	0.0021
1-Nitropyrene		0.03	0.0083
6-Nitrochrysene		0.02	0.0015
2-Nitrofluorene		0.02	0.0016
<b>Dioxin/Furans <sup>(2)</sup></b>		<b>SW-846 Method 8290 [pg/L]</b>	
2378-TCDD	1746-01-6	10.0	3.1
12378-PeCDD	40321-76-4	50.0	9.3
123678-HxCDD	57653-85-7	50.0	6.0
123478-HxCDD	39227-28-6	50.0	10.6
123789-HxCDD	19408-74-3	50.0	18.7
1234678-HpCDD	35822-46-9	50.0	8.1
OCDD	3268-87-9	100.0	38.0
2378-TCDF	51207-31-9	10.0	2.5
12378-PeCDF	57117-41-6	50.0	9.4
23478-PeCDF	57117-31-4	50.0	9.4
123678-HxCDF	57117-44-9	50.0	4.6
123789-HxCDF	72918-21-9	50.0	9.7
123478-HxCDF	70648-26-9	50.0	8.6
234678-HxCDF	60851-34-5	50.0	6.1
1234678-HpCDF	67562-39-4	50.0	4.3
1234789-HpCDF	55673-89-7	50.0	7.7
OCDF	39001-02-0	100.0	46.0
Total tetrachlorinated dioxins	41903-57-5	NA	NA
Total pentachlorinated dioxins	36088-22-9	NA	NA
Total hexachlorinated dioxins	34465-46-8	NA	NA
Total heptachlorinated dioxins	37871-00-4	NA	NA
Total tetrachlorinated furans	30402-14-3	NA	NA
Total pentachlorinated furans	30402-15-4	NA	NA
Total hexachlorinated furans	55684-94-1	NA	NA
Total heptachlorinated furans	38998-75-3	NA	NA
<b>BTEX</b>		<b>SW-846 Method 8260 [µg/L]</b>	
Benzene	71-43-2	0.5	0.105
Ethylbenzene	100-41-4	0.5	0.13
Toluene	108-88-3	0.5	0.0975
Xylenes (Total)	1330-20-7	1.0	0.219
<b>DRO</b>		<b>SW-846 Method 8015M [µg/L]</b>	
Diesel-Range Organics w/Silica gel		50	19

**Table 7**  
**Additional Parameter List and Method Reporting Limits**  
**St. Regis Paper Company Site**

Analyte	CAS Number	Method Reporting Limit	Method Detection Limit <sup>(1)</sup>
<b>Metals</b>		SW-846 Method 7195/6010B [µg/L]	
Arsenic	7440-38-2	0.5	0.1
Chromium, Total	7440-47-3	0.2	0.06
Copper	7440-50-8	0.2	0.2
Hexavalent Chromium (Cr VI)		10	4
Trivalent Chromium (Cr III) (by calc)		n/a	n/a

**Notes:**

CAS - Chemical Abstracts Service  
 PCDD - polychlorinated dibenzo-p-dioxin

PCDF - polychlorinated dibenzofuran

NA - not applicable

<sup>(1)</sup> Method detection limits are subject to change based on the laboratory's MDL study schedule.

<sup>(2)</sup> Method detection limits for dioxin analysis are acutally EDLs per Method 8290. The EDLs are sample specific, therefore, the values shown represent the typical level of sensitivty of the method and are not intended to be absolute.

**Table 8**  
**2008 Water Elevations**  
**St. Regis Paper Company Site and City Dump Site**

[Elevation datum: NAVD 88]

Monitoring Location	5/15-5/16/2008		11/18-11/19/2008	
	Elevation [ft MSL]	Rationale for Exclusion	Elevation [ft MSL]	Rationale for Exclusion
W129	1305.50		1306.36	
W130	1304.92		1306.45	
<b>OU3 - City Dump Area</b>				
W2102	1304.39		1304.55	
W2103	1304.13		1304.39	
W2104	1304.50		1304.70	
W2105	1304.07		1304.16	
W2106	1303.79		1304.00	
W2127	1303.98		---	Frozen
Fox Creek @ W2127	1303.92		1303.55	
W2128	1303.90		---	Frozen
W2129	1303.25		---	Frozen
W2134	1303.86		1303.99	
W2135	1303.87		1303.99	
W2228	1304.15		---	Frozen
W2233	1304.35		1304.60	
W2234	1303.99		1304.07	
W2236	1304.39		1304.65	
W2237				
W2238	1304.05		---	Frozen
W2301	1304.68		1305.24	
W2325	1304.77		1305.30	
W2326	1304.77		1305.09	
W2329	1303.98		---	Frozen
W2333	1304.50		1304.95	
W2335	1304.06		1304.39	
W2336	1304.42		1304.78	
W2401	1284.66		1288.38	
W2403	1286.73		1288.98	
W2402	1291.94		1294.24	
S2401	1303.68		1303.79	
S2403	1303.55		1303.23	
S2402	1303.33		1303.42	
W2501	1304.15		1304.41	
W2502	1303.80		1304.02	
W2504	1303.88		1304.08	
W2505	1303.96		1304.22	

\* Denotes anomalous data based on pattern review.

NM - Not measured.

Elevation used in surficial aquifer evaluation.

Measured elevation used in to establish control points.

Elevation used in lower aquifer evaluation.

Corrected water elevation used in evaluation.

**Table 8**  
**2008 Water Elevations**  
**St. Regis Paper Company Site and City Dump Site**

[Elevation datum: NAVD 88]

Monitoring Location	5/15-5/16/2008		11/18-11/19/2008	
	Elevation [ft MSL]	Rationale for Exclusion	Elevation [ft MSL]	Rationale for Exclusion
<b>OU1 - Treating Facility Area</b>				
W104	1304.11		1304.48	
W105R	1303.25		1303.27	
W112	1303.05		1303.02	
W114	1303.33		1303.19	
W115	1302.70		1302.52	
W118	1304.45		1304.95	
DNR #11016	1304.78		1305.63	
W205	1303.22		1303.29	
W209	1303.69		1303.93	
W212	1303.10		1303.04	
W213	1302.94		1302.93	
W215	1302.93		1302.91	
W217	1302.71		1302.66	
W218	1304.43		1304.95	
W219	1302.83		1302.74	
W220	1302.97		1302.87	
W221	1302.83		1302.78	
W222	1303.57		1303.57	
W223	1303.34		1303.56	
W411	1303.24		1303.32	
MW3	1306.09		1307.05	
W302	1305.75		1306.63	
W306	1303.43		1303.48	
W401	1302.64		1302.42	
W402	1302.43		1302.58	
W403	1302.37		1302.34	
W404	1303.02		1303.10	
W405	1287.97		1290.42	
W406	1293.92		1291.95	
W407	1300.95		1300.95	
W408	1300.15		1300.78	
W409	1299.21		1298.84	
W410	1299.22		1302.15	
S401	1304.32		1304.94	
S402	1303.32		1303.52	
S403	1304.64	Screened in wetland deposit	1304.39	Screened in wetland deposit
S405	1303.22	Screened in wetland deposit	1303.44	Screened in wetland deposit
W509	1303.12		1303.18	
W510	1303.04		1303.12	
W511	1302.97		1303.06	
W512	1303.00		1303.12	
W513	1302.74		1302.85	
W514	1303.07		1303.18	
North Staff	1302.6		1302.4	
RR Staff	1302.8		1302.5	
South Staff	1302.6		1302.4	
<b>OU2 - Containment Vault Area</b>				
W124	1305.25		1306.98	
W125	1305.46		1307.00	
W126	1305.18		1306.11	
W127	1305.24		1306.00	
W128	1305.33		1306.06	

**Table 9**  
**Groundwater Quality Data - Shallow Surficial Aquifer**  
**OU1 - Treating Facility Site**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location	Cass Lake	W104	W105R	W105R	W112	W112	W114	W115
Date	DWC	5/26/2008	5/18/2008	5/18/2008	5/18/2008	5/18/2008	5/18/2008	5/19/2008
Lab	CAS							
Dup		DUP		DUP		DUP		
Exceedance Key	Bold							
<b>Benzo(a)anthracene</b>	--	<0.0026	<0.0026	--	0.0064 j	0.0061 j	<0.0026	<0.0026
<b>Chrysene</b>	--	<0.0034	<0.0034	--	<0.0034	<0.0034	<0.0034	<0.0034
<b>Benzo(b)fluoranthene</b>	--	<0.0023	<0.0023	--	0.0026 j	<0.0023	<0.0023	<0.0023
<b>Benzo(k)fluoranthene</b>	--	<0.0025	<0.0025	--	<0.0025	<0.0025	<0.0025	<0.0025
<b>Benzo(a)pyrene</b>	--	<0.0043	<0.0043	--	<0.0043	<0.0043	<0.0043	<0.0043
<b>Indeno(1,2,3-cd)pyrene</b>	--	<0.0026	<0.0026	--	0.0034 j	<0.0026	<0.0026	<0.0026
<b>Dibenz(a,h)anthracene</b>	--	<0.0025	<0.0025	--	<0.0025	<0.0025	<0.0025	<0.0025
<b>BaP equivalent, non-detects at half of the detection limit.<sup>1</sup></b>	0.2	<0.0034	<0.0034	--	0.0042 a	0.0038 a	<0.0034	<0.0034
<b>BaP equivalent, non-detects at zero for the detection limit.<sup>2</sup></b>	0.2	ND	ND	--	0.0012 a	0.00061 a	ND	ND
<b>2-Methylnaphthalene</b>	--	<0.037	<0.0028	--	<0.0032	<0.0030	<0.0023	<0.0023
<b>Naphthalene</b>	300	<0.16	<1.5	--	<0.0070	<0.018	<0.011	<0.013
<b>Acenaphthylene</b>	--	0.065	<0.0034	--	<0.0034	<0.0034	<0.0034	<0.0034
<b>Acenaphthene</b>	400	1.0	<0.0044	--	0.013 j	0.012 j	<0.0044	<0.0044
<b>Fluorene</b>	300	2.6	<0.0038	--	0.0053 j	0.0058 j	<0.0038	<0.0038
<b>Phenanthrene</b>	--	0.74	0.0084 j	--	0.013 j	0.014 j	<0.0050	<0.0050
<b>Anthracene</b>	2000	0.28	0.0096 j	--	<0.0036	<0.0036	<0.0036	<0.0036
<b>Fluoranthene</b>	300	<0.0044	0.0051 j	--	0.047	0.046	<0.0044	<0.0044
<b>Pyrene</b>	200	<0.0035	0.0044 j	--	0.046	0.050	<0.0035	<0.0035
<b>Benzo(g,h,i)perylene</b>	--	<0.0029	<0.0029	--	<0.0029	<0.0029	<0.0029	<0.0029
<b>Pentachlorophenol</b>	1	220	66	65	<0.080	<0.080	<0.080	<0.080

**Table 9**  
**Groundwater Quality Data - Shallow Surficial Aquifer**  
**OU1 - Treating Facility Site**  
**St. Regis Paper Company Site**  
**Footnotes**

DWC - Drinking Water Criteria (comprised of EPA MCLs and MN HRLs).

DUP Duplicate sample.

— No criteria/not analyzed.

ND Not detected.

a Estimated value, calculated using some or all values that are estimates.

j Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

1 Total BaP equivalence (2002) calculated using half of the detection limit on the non detected compounds.

2 Total BaP equivalence (2002) calculated using 0 for the detection limit on the non detected compounds.

CAS No.	Site Conc. (ug/L) dry weight	Relative Potency Factor	BaP Equivalent (ug/L)
Benzo(a)anthracene	56553	0.000	0.1
Benzo(b)fluoranthene	205992	0.000	0.1
Benzo(k)fluoranthene	207089	0.000	0.1
Benzo(a)pyrene	50328	0.000	1
Chrysene	218019	0.000	0.01
Dibenz(a,h)anthracene	53703	0.000	0.56
Indeno(1,2,3-cd)pyrene	193395	0.000	0.1

Total BaP equivalence = 0.000  
 compare this value  
 to the BaP criteria

**Table 10**  
**Groundwater Quality Data - Base of Surficial Aquifer**  
**OU1 - Treating Facility Site**  
**St. Regis Paper Company Site**  
**Footnotes**

Location	Cass Lake	W205	W209	W212	W212	W212	W212	W212	W213	W213	W213	W213	W215
Date	DWC	5/18/2008	5/19/2008	3/27/2008	5/26/2008	8/22/2008	8/22/2008	11/20/2008	3/27/2008	5/26/2008	8/22/2008	11/20/2008	5/26/2008
Lab		CAS	CAS	CAS	CAS	CAS	CAS						
Dup								DUP					
<b>Exceedance Key</b>	<b>Bold</b>												
Benzo(a)anthracene	--	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
Chrysene	--	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034
Benzo(b)fluoranthene	--	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023
Benzo(k)fluoranthene	--	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Benzo(a)pyrene	--	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043
Indeno(1,2,3-cd)pyrene	--	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
Dibenz(a,h)anthracene	--	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
BaP equivalent, non-detects at half of the detection limit. <sup>1</sup>	0.2	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034
BaP equivalent, non-detects at zero for the detection limit. <sup>2</sup>	0.2	ND	ND	ND	ND	ND	ND						
2-Methylnaphthalene	--	<0.0023	<0.0023	0.042	<0.063	<0.0038	<0.0042	<0.018	0.0052 j	<0.0052	<0.0058	<0.0041	0.011 j
Naphthalene	300	<0.041	<0.011	0.65	0.90	<0.022	<0.027	0.49	5.5	<6.8	<2.6	2.3	0.31
Acenaphthylene	--	<0.0034	<0.0034	<0.0040	<0.0034	<0.0034	<0.0034	<0.0034	0.081	0.091	<0.057	<0.074	<0.0034
Acenaphthene	400	<0.0044	<0.0044	0.021	<0.014	<0.0044	<0.0044	0.020	4.6	<6.0	<3.6	4.4	0.078
Fluorene	300	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	0.76	0.76	<0.60	0.71	<0.0038
Phenanthrene	--	<0.0050	<0.0050	0.0052 j	<0.0088	<0.0050	<0.0050	0.0077 j	0.015 j	<0.012	<0.010	0.020	<0.0050
Anthracene	2000	<0.0036	<0.0036	0.020	0.023	<0.0036	<0.0036	0.022	0.24	0.21	<0.20	0.21	0.035
Fluoranthene	300	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044
Pyrene	200	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035
Benzo(g,h,i)perylene	--	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029
Pentachlorophenol	1	<0.080	<0.080	25	23	110	110	16	<0.080	<0.080	0.11 j	<0.80	<0.080

**Table 10**  
**Groundwater Quality Data - Base of Surficial Aquifer**  
**OU1 - Treating Facility Site**  
**St. Regis Paper Company Site**  
**Footnotes**

Location	Cass Lake	W217	W218	W219	W219	W220	W220	W220	W220	W220	W221
Date	DWC	5/18/2008	5/27/2008	5/18/2008	5/18/2008	3/27/2008	5/26/2008	5/26/2008	8/23/2008	11/19/2008	5/18/2008
Lab		CAS	CAS								
Dup				DUP			DUP				
<b>Exceedance Key</b>	<b>Bold</b>										
Benzo(a)anthracene	--	<0.0027	<0.0026	<0.0049	<0.0056	<0.0026	<0.0048	<0.0026	<0.0026	<0.0026	<0.0026
Chrysene	--	<0.0035	<0.0034	<0.0034	<0.0034	<0.0034	0.0036 j	<0.0034	<0.0034	<0.0034	<0.0034
Benzo(b)fluoranthene	--	<0.0024	<0.0023	<0.0023	<0.0023	<0.0023	<0.0052	<0.0023	<0.0023	<0.0023	<0.0023
Benzo(k)fluoranthene	--	<0.0026	<0.0025	<0.0025	<0.0025	<0.0025	<0.0046	<0.0025	<0.0025	<0.0025	<0.0025
Benzo(a)pyrene	--	<0.0044	<0.0043	<0.0043	<0.0043	<0.0043	0.0045 j	<0.0043	<0.0043	<0.0043	<0.0043
Indeno(1,2,3-cd)pyrene	--	<0.0027	<0.0026	<0.0026	<0.0026	<0.0026	<0.011	<0.0026	<0.0026	<0.0026	<0.0026
Dibenz(a,h)anthracene	--	<0.0026	<0.0025	<0.0025	<0.0025	<0.0025	<0.0069	<0.0025	<0.0025	<0.0025	<0.0025
BaP equivalent, non-detects at half of the detection limit. <sup>1</sup>	0.2	<0.0035	<0.0034	<0.0035	<0.0035	<0.0034	0.0077 a	<0.0034	<0.0034	<0.0034	<0.0034
BaP equivalent, non-detects at zero for the detection limit. <sup>2</sup>	0.2	ND	ND	ND	ND	ND	0.0045 a	ND	ND	ND	ND
2-Methylnaphthalene	--	<0.0024	0.0035 j	<0.024	<0.026	0.0057 j	<0.0081	0.011 j	<0.0035	<0.0070	<0.0023
Naphthalene	300	<0.048	0.023	<0.055	<0.051	<5.1	4.9	5.2	0.56	4.3	<0.013
Acenaphthylene	--	<0.0035	<0.0034	<0.0034	<0.014	<0.0086	<0.0034	<0.0081	<0.0034	<0.0086	<0.0034
Acenaphthene	400	<0.0045	<0.0044	0.33	0.36	0.029	<0.025	<0.024	<0.019	0.027	<0.0044
Fluorene	300	<0.0039	<0.0038	<0.0038	<0.0038	0.24	0.26	0.28	0.19	0.29	<0.0038
Phenanthrene	--	<0.0051	<0.0050	0.038	0.043	<0.015	<0.012	<0.013	<0.0086	0.012 j	<0.0050
Anthracene	2000	0.015 j	<0.0036	0.041	0.063	<0.081	0.098	0.088	0.048	0.084	<0.0036
Fluoranthene	300	<0.0045	<0.0044	0.030	0.028	0.0050 j	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044
Pyrene	200	<0.0036	0.0064 j	0.020	0.021	<0.0035	0.0044 j	<0.0035	<0.0035	<0.0035	<0.0035
Benzo(g,h,i)perylene	--	<0.0030	<0.0029	<0.0029	<0.0029	<0.0029	<0.012	<0.0029	<0.0029	<0.0029	<0.0029
Pentachlorophenol	1	<0.080	7.8	<0.080	<0.080	1.9	17	17	0.50 p	17	<0.080

**Table 10**  
**Groundwater Quality Data - Base of Surficial Aquifer**  
**OU1 - Treating Facility Site**  
**St. Regis Paper Company Site**  
**Footnotes**

DWC - Drinking Water Criteria (comprised of EPA MCLs and MN HRLs).

- DUP Duplicate sample.
- No criteria.
- \* Estimated value, QA/QC criteria not met.
- ND Not detected.
- a Estimated value, calculated using some or all values that are estimates.
- j Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.
- p Relative percent difference is >40% (25% CLP pesticides) between primary and confirmation GC columns.

1 Total BaP equivalence (2002) calculated using half of the detection limit on the non detected compounds.

2 Total BaP equivalence (2002) calculated using 0 for the detection limit on the non detected compounds.

	CAS No.	Site Conc.	Relative	BaP
		(ug/L) dry weight	Potency Factor	Equivalent (ug/L)
Benzo(a)anthracene	56553	0.000	0.1	0.000
Benzo(b)fluoranthene	205992	0.000	0.1	0.000
Benzo(k)fluoranthene	207089	0.000	0.1	0.000
Benzo(a)pyrene	50328	0.000	1	0.000
Chrysene	218019	0.000	0.01	0.000
Dibenz(a,h)anthracene	53703	0.000	0.56	0.000
Indeno(1,2,3-cd)pyrene	193395	0.000	0.1	0.000

Total BaP equivalence = 0.000  
 compare this value  
 to the BaP criteria

**Table 11**  
**Groundwater Quality Data - Lower Aquifer**  
**OU1 - Treating Facility Site**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location	Cass Lake DWC	MW3 5/25/2008 CAS	W302 5/24/2008 CAS	W306 5/24/2008 CAS
<b>Exceedance Key</b>	<b>Bold</b>			
<b>Benzo(a)anthracene</b>	--	<0.0026	<0.0026	<0.0026
<b>Chrysene</b>	--	<0.0034	<0.0034	<0.0034
<b>Benzo(b)fluoranthene</b>	--	<0.0023	<0.0023	<0.0023
<b>Benzo(k)fluoranthene</b>	--	<0.0025	<0.0025	<0.0025
<b>Benzo(a)pyrene</b>	--	<0.0043	<0.0043	<0.0043
<b>Indeno(1,2,3-cd)pyrene</b>	--	<0.0026	<0.0026	<0.0026
<b>Dibenz(a,h)anthracene</b>	--	<0.0025	<0.0031	<0.0025
<b>BaP equivalent, non-detects at half of the detection limit.<sup>1</sup></b>	0.2	<0.0034	<0.0035	<0.0034
<b>BaP equivalent, non-detects at zero for the detection limit.<sup>2</sup></b>	0.2	ND	ND	ND
<b>2-Methylnaphthalene</b>	--	<0.0036	<0.0073	<0.0067
<b>Naphthalene</b>	300	<0.027	<0.041	<0.038
<b>Acenaphthylene</b>	--	<0.0034	<0.0034	<0.0034
<b>Acenaphthene</b>	400	<0.0044	<0.0044	<0.0044
<b>Fluorene</b>	300	<0.0038	<0.0038	<0.0038
<b>Phenanthrene</b>	--	<0.0054	<0.0050	<0.0066
<b>Anthracene</b>	2000	<0.0036	<0.0036	<0.0036
<b>Fluoranthene</b>	300	<0.0044	<0.0044	<0.0044
<b>Pyrene</b>	200	<0.0035	<0.0035	<0.0035
<b>Benzo(g,h,i)perylene</b>	--	<0.0029	<0.0029	<0.0029
<b>Pentachlorophenol</b>	1	<0.080	<0.080	<0.080

**Table 11**  
**Groundwater Quality Data - Lower Aquifer**  
**OU1 - Treating Facility Site**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

DWC - Drinking Water Criteria (comprised of EPA MCLs and MN HRLs).

-- No criteria.

ND Not detected.

1 Total BaP equivalence (2002) calculated using half of the detection limit on the non detected compounds.

2 Total BaP equivalence (2002) calculated using 0 for the detection limit on the non detected compounds.

	CAS No.	Site Conc.	Relative	BaP
		(ug/L) dry weight	Potency Factor	Equivalent (ug/L)
Benzo(a)anthracene	56553	0.000	0.1	0.000
Benzo(b)fluoranthene	205992	0.000	0.1	0.000
Benzo(k)fluoranthene	207089	0.000	0.1	0.000
Benzo(a)pyrene	50328	0.000	1	0.000
Chrysene	218019	0.000	0.01	0.000
Dibenz(a,h)anthracene	53703	0.000	0.56	0.000
Indeno(1,2,3-cd)pyrene	193395	0.000	0.1	0.000

Total BaP equivalence = 0.000  
 compare this value  
 to the BaP criteria

**Table 12**  
**Surface Water Quality**  
**Cass Lake/Pike Bay Channel**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location	Surface Water Standards	CL-N 5/19/2008 CAS	CL-S 5/19/2008 CAS
Date			
Lab			
<b>Exceedance Key</b>	<b>Bold</b>		
Pentachlorophenol	5.5	<0.080	<0.080

Surface Water Standard = 5.5 µg/L at pH = 7.0.

**Table 13**  
**Water Quality Data Over Time**  
**OU1 - Treating Facility Area**  
**St. Regis Paper Company and City Dump Pit Sites**  
(bconcentrations in ug/L)

Top of Surficial Aquifer																					
Year	MW104			MW105			MW112			MW113			MW114			MW115			MW118		
	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP
DWC	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1
1986	0.59 U	1.7	670	0.0011 U	0.023	5 U	0.0015	0.016	6 U	0.0028 U	0.019	5 U	0.0028 U	0.017	5 U	0.0011 U	0.012	6 U	1200 U	5,600	150,000
1987	5.9 U	14	1,000	--	--	--	0.0016	0.026	6 U	5.9 U	6.6	100	0.0011 U	0.0093	6 U	0.0011 U	0.012	6 U	590 U	9,000	49,000
1988	5.9 U	28	990	--	--	--	0.0026	0.0064	6 U	0.039 U	0.0064	6 U	0.0011 U	0.0067	6 U	0.0023 U	0.0074	6 U	200 U	1,500	46,000
1989	9.9 U	10 U	330	--	--	--	0.0022	0.0038 U	6 U	0.0011 U	0.006	6 U	0.0011 U	0.0086	6 U	0.0011 U	0.0064	6 U	150 U	1,300	54,000
1990	9.9 U	10 U	820	--	--	--	0.0021 U	0.0038	6 U	0.0013	0.0019 U	6 U	0.0011 U	0.002	6 U	0.0011 U	0.0019 U	6 U	1200 U	6,700	60,000
1991	9.9 U	10 U	200	--	--	--	0.12 U	1.1	6 U	0.095 U	1.9	6 U	0.003 U	0.0094	6 U	0.003 U	0.0111	6 U	1200 U	--	--
1992	9.9 U	10 U	84	--	--	--	0.003 U	0.004 U	6 U	0.028	0.021	6 U	0.0059 U	0.008 U	6 U	0.003 U	0.0086	6 U	--	--	--
1993	0.21 U	0.29 U	250	0.003 U	0.0125	6 U	0.003 U	0.004 U	6 U	0.0059	0.0198	6 U	0.003 U	0.0121	6 U	0.003 U	0.0113	6 U	--	--	--
1994	0.12 U	0.244	110	0.003 U	0.01	3 U	0.0038	0.011	3 U	0.03 U	0.031	3 U	0.003 U	0.022	3 U	0.003 U	0.011	3 U	--	--	--
1995	0.59 U	3.8	590	--	--	--	0.0033	0.003	3 U	--	--	--	0.003 U	0.004	3 U	0.003 U	0.003	3 U	--	--	--
1996	--	--	--	--	--	--	--	--	--	--	--	--	9.9 U	10 U	50 U	9.9 U	10 U	50 U	--	--	--
1997	79 U	80 U	740	--	--	--	9.9 U	10 U	50 U	--	--	--	9.9 U	10 U	50 U	9.9 U	10 U	50 U	--	--	--
1998	--	--	--	--	--	--	--	--	--	--	--	--	0.0099 U	0.1 U	5 U	0.0099 U	0.1 U	5 U	--	--	--
1999	0.02 U	0.94	1000	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U	--	--	--	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U	--	--	--
2000	--	--	--	--	--	--	--	--	--	--	--	--	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U	--	--	--
2001	0.019 U	14	2400	0.02 U	0.02 U	0.5 U	0.019 U	0.019 U	0.5 U	--	--	--	0.019 U	0.019 U	0.5 U	0.019 U	0.019 U	0.5 U	--	--	--
2002	--	--	--	--	--	--	--	--	--	--	--	--	0.02 U	0.02 U	3 U	0.021 U	0.021 U	3.1 U	--	--	--
2003	0.020 U	30	3200	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	0.5 U	--	--	--	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	0.5 U	--	--	--
2004	--	--	--	0.02 U	0.02 U	0.96 U	--	--	--	--	--	--	0.02 U	0.02 U	0.96 U	0.02 U	0.02 U	0.96 U	--	--	--
2005	0.020 U	1.7	310	0.021 U	0.021 U	0.5 U	0.02 U	0.02 U	0.5 U	--	--	--	0.021 U	0.021 U	0.5 U	0.022 U	0.022 U	0.5 U	--	--	--
2006	0.004 U	0.2 U	670	0.004 U	0.031 U	0.13 U	0.006 a	0.0066 U	0.13 U	--	--	--	0.004 U	0.0078 U	0.13 U	0.004 U	0.009 U	0.13 U	--	--	--
2007	0.004 U	0.74	290	0.0097 a	0.78	36	0.0044 a	0.0065 U	0.13 U	--	--	--	0.004 U	0.0065 U	0.13 U	0.004 U	0.0067 U	0.13 U	--	--	--
2008	0.0034 U	0.16 U	220	0.0034 U	1.5 U	66	0.0042 a	0.0070 U	0.080 U	--	--	--	0.0034 U	0.011 U	0.080 U	0.0034 U	0.013 U	0.080 U	--	--	--

-- No sample collected or analyzed.

a Estimated value, calculated using some or all values that are estimates.

U Value is non-detect at the method reporting limit.

Shaded cell indicates concentration above response action level (DWC).

BaP Eq - Benzo(a)pyrene equivalency calculated at ND = 1/2 DL.

Naph. - Naphthalene concentration

PCP - Pentachlorophenol concentration

MW105 was replaced with MW105R in 2007 and is denoted by a break in the data set.

s - Potential false positive value based on statistical analysis of blank sample data

**Table 13**  
**Water Quality Data Over Time**  
**OU1 - Treating Facility Area**  
**St. Regis Paper Company and City Dump Pit Sites**  
(bconcentrations in ug/L)

Base of Surficial Aquifer																					
Year	MW205			MW209			MW212			MW213			MW215			MW217			MW218		
	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP
DWC	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1
1986	0.0028 U	0.013	6 U	0.0191	0.075	6 U	5.8 U	980	8900	12 U	1,300	20,000	0.0011 U	11	27,000	0.0028 U	0.041	6 U	0.031	0.038 U	3,000
1987	--	--	--	--	--	--	120 U	740	4000	120 U	1,100	12,000	5.9 U	11	27,000	0.0011 U	0.011	6 U	0.031	0.038 U	3,000
1988	--	--	--	--	--	--	5.9 U	550	3800	5.9 U	1,200	4,800	5.9 U	8.6	4,400	0.0011 U	0.007	6 U	0.011 U	1.4	860
1989	--	--	--	--	--	--	20 U	230	3500	20 U	1,000	12,000	9.9 U	10 U	2,700	0.0011 U	0.0094	6 U	0.045 U	1.9	78
1990	--	--	--	--	--	--	9.9 U	52	5100	9.9 U	470	5,800	9.9 U	13	4,200	0.0011 U	0.0019 U	6 U	0.09 U	8.8	490
1991	--	--	--	--	--	--	99 U	28	2200	39 U	810	830	99 U	100 U	2,800	0.003 U	0.011	6 U	0.059 U	0.08 U	170
1992	--	--	--	--	--	--	150 U	150 U	2200	9.9 U	150	300	74 U	75 U	1,900	0.0053	0.019	6 U	0.024 U	0.032 U	14
1993	0.003 U	0.0113	6 U	--	--	--	9.9 U	13	2900	9.9 U	170	10 U	9.9 U	5	2,200	0.003 U	0.007	6 U	0.0033	0.0823	26
1994	0.12 U	0.12 U	3 U	--	--	--	9.9 U	10	3900	20 U	130	20 U	9.9 U	4	3,400	0.0059 U	0.015	3 U	0.059 U	0.06 U	13
1995	--	--	--	--	--	--	740 U	750 U	2300	9.9 U	67	10 U	490 U	500 U	1,600	0.003 U	0.003	3 U	0.012 U	0.012 U	26
1996	--	--	--	--	--	--	9.9 U	5	1300	9.9 U	47	50 U	9.9 U	1	1,100	--	--	--	--	--	--
1997	--	--	--	--	--	--	69 U	70 U	950	9.9 U	36	50 U	99 U	100 U	1,200	9.9 U	10 U	50 U	9.9 U	10 U	17
1998	--	--	--	--	--	--	0.39 U	1.6	470	0.99 U	21	3 U	0.69 U	0.7 U	700	--	--	--	--	--	--
1999	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U	0.02 U	2.4	430	0.02 U	22	3 U	0.02 U	0.41	410	0.02 U	0.02 U	3 U	0.02 U	0.02 U	45
2000	--	--	--	--	--	--	0.02 U	2.8	69	0.02 U	470	1,900	0.02 U	0.48	68	--	--	--	--	--	--
2001	0.019 U	0.019 U	0.5 U	0.019 U	0.019 U	0.5 U	0.019 U	3.1	110	0.019 U	64	0.5 U	0.019 U	0.55	320	0.02 U	0.02 U	0.5 U	0.019 U	0.019 U	34
2002	--	--	--	--	--	--	0.02 U	1.1	19	0.02 U	36	3 U	0.02 U	0.52	160	--	--	--	--	--	--
2003	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	0.5 U	0.02 U	1.4	45	0.02 U	31	0.5 U	0.02 U	0.3	47	0.02 U	0.02 U	0.5 U	0.02 U	0.12	4
2004	--	--	--	--	--	--	0.02 U	1.8	46	0.02 U	21	0.96 U	0.02 U	0.34	78	--	--	--	--	--	--
2005	0.02 U	0.02 U	0.5 U	0.022 U	0.022 U	0.5 U	0.02 U	1.8	46	0.02 U	200	0.5 U	0.021 U	0.64	21	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	110
2006	0.004 U	0.0078 U	0.13 U	0.004 U	0.0088 U	0.13 U	0.004 U	1.7	17	0.004 U	140	0.13 U	0.1 U	0.26 U	13	0.004 U	0.008 U	0.13 U	0.004 U	5.2	66
2007	0.004 U	0.0065 U	0.13 U	0.004 U	0.0065 U	0.13 U	0.004 U	1	15	0.004 U	100	0.13 U	0.004 U	0.18 U	2.9	0.004 U	0.0065 U	0.13 U	0.004 U	0.01 U	15
2008	0.0034 U	0.041 U	0.080 U	0.0034 U	0.011 U	0.080 U	0.0034 U	0.90	23	0.0034 U	6.8 U	0.080 U	0.0034 U	0.31	0.080 U	0.0035 U	0.048 U	0.080 U	0.0034 U	0.023	7.8

--- No sample collected or analyzed.

a Estimated value, calculated using some or all values that are estimates.

U Value is non-detect at the method reporting limit.

Shaded cell indicates concentration above response action level (DWC).

BaP Eq - Benzo(a)pyrene equivalency calculated at ND = 1/2 DL.

Naph. - Naphthalene concentration

PCP - Pentachlorophenol concentration

s - Potential false positive value based on statistical analysis of blank sample data

**Table 13**  
**Water Quality Data Over Time**  
**OU1 - Treating Facility Area**  
**St. Regis Paper Company and City Dump Pit Sites**  
(bconcentrations in ug/L)

Base of Surficial Aquifer									Lower Aquifer												
Year	MW219			MW220			MW221			MW411			MW302			MW306			MW3		
	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP			
DWC	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1			
1986	0.023 U	0.071	6 U	—	—	—	—	—	—	0.0011	—	6 U	0.0011 U	—	6 U	—	—	—			
1987	5.9 U	6 U	7.8	—	—	—	—	—	—	1.1 U	1.9 U	690	0.0011 U	0.012	6 U	0.0011 U	0.016	6 U			
1988	5.9 U	6 U	6 U	—	—	—	—	—	—	—	—	—	0.027	0.049	6 U	0.0049	0.013	6 U			
1989	0.045 U	0.69	16	—	—	—	—	—	—	—	—	—	0.0023 U	0.037	6 U	0.0011 U	0.0047	6 U			
1990	9.9 U	10 U	10 U	—	—	—	—	—	—	—	—	—	0.0011 U	0.018	6 U	0.0011 U	0.003	6 U			
1991	9.9 U	10 U	10 U	—	—	—	—	—	—	—	—	—	0.003 U	0.037	6 U	0.003 U	0.32	6 U			
1992	9.9 U	10 U	10 U	—	—	—	—	—	—	—	—	—	0.0031	0.019	6 U	0.0059 U	0.008 U	6 U			
1993	0.095 U	0.246	6 U	—	—	—	—	—	—	—	—	—	0.003 U	0.0095	6 U	0.003 U	0.0092	6 U			
1994	0.35 U	0.276	3 U	3 U	363	1,000	0.0059 U	0.031	3 U	—	—	—	0.012 U	0.095	3 U	0.0072	0.01	3 U			
1995	0.44 U	0.45 U	3 U	200 U	200	570	0.003 U	0.003	3 U	—	—	—	0.003 U	0.016	3 U	0.003 U	0.007	3 U			
1996	—	—	—	9.9 U	76	180	—	—	—	—	—	—	—	—	9.9 U	10 U	50 U	—			
1997	9.9 U	10 U	50 U	39 U	48	200	9.9 U	10 U	50 U	—	—	—	9.9 U	10 U	50 U	9.9 U	10 U	50 U			
1998	—	—	—	1.2 U	23	98	—	—	—	—	—	—	—	—	0.099 U	0.1 U	5 U	—			
1999	0.02 U	0.14	3 U	0.02 U	11	72	0.02 U	0.02 U	3 U	0.02 U	0.03	350	0.02 U	0.02 U	3 U	0.02 U	0.04	3 U			
2000	0.02 U	0.21	3 U	0.02 U	21	88	—	—	—	—	—	—	—	—	0.02 U	0.02 U	3 U	—			
2001	0.02 U	0.22	0.5 U	0.019 U	18	24	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	14	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	0.5 U			
2002	0.021 U	0.22	3.1 U	0.02 U	16	4.5	—	—	—	—	—	—	—	—	0.021 U	0.023	0.5 U	—			
2003	0.02 U	0.11	0.5 U	0.02 U	7.4	51	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	12	0.02 U	0.042	0.5 U	0.02 U	0.031	0.5 U			
2004	0.02 U	0.13	0.96 U	0.02 U	14	7.5	—	—	—	—	—	—	—	—	0.02 U	0.02 U	0.96 U	—			
2005	0.02 U	0.12	0.5 U	0.02 U	16	9.6	0.02 U	0.02 U	0.5 U	0.023 U	0.18 U	17	0.02 U	0.02 U	0.5 U	0.021 U	0.021 U	0.5 U			
2006	0.004 U	0.077 U	0.13 U	0.095 U	12	7.1	0.004 U	0.0065 U	0.13 U	0.004 U	0.021 U	31	0.004	0.029 U	0.14 J	0.004 U	0.034 U	0.19 J			
2007	0.004 U	0.067 U	0.13 U	0.0052 a	9.6	12	0.004 U	0.0065 U	0.13 U	0.004 U	0.039 U	11	0.004 U	0.035	0.13 U	0.004 U	0.011 J	0.13 U			
2008	0.0035 U	0.055 U	0.080 U	0.0077 a	4.9	17	0.0034 U	0.013 U	0.080 U	0.0035 U	0.020 U	15	0.0035 U	0.041 U	0.080 U	0.0034 U	0.038 U	0.080 U			

— No sample collected or analyzed.

a Estimated value, calculated using some or all values that are estimates.

U Value is non-detect at the method reporting limit.

Shaded cell indicates concentration above response action level (DWC).

BaP Eq - Benzo(a)pyrene equivalency calculated at ND = 1/2 DL.

Naph. - Naphthalene concentration

PCP - Pentachlorophenol concentration

s - Potential false positive value based on statistical analysis of blank sample data

**Table 13**  
**Water Quality Data Over Time**  
**OU1 - Treating Facility Area**  
**St. Regis Paper Company and City Dump Pit Sites**  
(bconcentrations in ug/L)

Year	CL-N			CL-S		
	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP
SWQ			5.5			5.5
1986	0.001 U	s	5 U	0.001 U	s	5 U
1987	—	—	6 U	—	—	6 U
1988	—	—	10 U	—	—	10 U
1989	—	—	6 U	—	—	6 U
1990	0.001 U	0.0072	6 U	0.001 U	0.0076	6 U
1991	—	—	10 U	—	—	10 U
1992	—	—	10 U	—	—	10 U
1993	—	—	10 U	—	—	10 U
1994	—	—	7	—	—	75
1995	—	—	3 U	—	—	3 U
1996	—	—	50 U	—	—	50 U
1997	—	—	50 U	—	—	50 U
1998	—	—	5 U	—	—	5 U
1999	—	—	0.5 U	—	—	0.5 U
2000	—	—	0.5 U	—	—	2.2
2001	—	—	0.5 U	—	—	0.5 U
2002	—	—	0.5 U	—	—	0.5 U
2003	—	—	0.5 U	—	—	0.5 U
2004	—	—	0.5 U	—	—	0.5 U
2005	—	—	0.5 U	—	—	0.5 U
2006	—	—	0.13 U	—	—	0.13 U
2007	—	—	0.13 U	—	—	0.13 U
2008	—	—	0.080 U	—	—	0.080 U

— No sample collected or analyzed.

U Value is non-detect at the method reporting limit.

SWQ - Surface Water Criteria @ pH = 7.0

Shaded cell indicates concentration above response action level (SWQ).

BaP Eq - Benzo(a)pyrene equivalency calculated at ND = 1/2 DL.

Naph. - Naphthalene concentration

PCP - Pentachlorophenol concentration

s - Potential false positive value based on statistical analysis of blank sample data

**Table 14**  
**Groundwater Quality Data - Additional Parameters and Intervention Limits**  
**OU1 - Treating Facility Site**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L, unless noted otherwise)**

Location	Intervention	W212 3/27/2008	W212 5/26/2008	W212 8/22/2008	W212 8/22/2008	W212 11/20/2008	W213 3/27/2008	W213 5/26/2008	W213 8/22/2008	W213 11/20/2008	W215 5/26/2008	W215 5/26/2008	W220 3/27/2008
Date	Limits	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	Legend	CAS	CAS
Lab													
Dup													
Exceedance Key	<b>Bold</b>												
	<u>TPHs</u>												
Diesel Range Organics	200	80	100	<100	<110	--	330	470	340 AT	--	--	--	<110
Diesel Range Organics-Silica gel cleanup	200	--	--	--	--	<18	--	--	--	<62	--	--	--
	<u>VOCs</u>												
Benzene	114	<0.14	<0.045	<0.045	<0.045	<0.045	<0.14	0.10 j	<0.11	0.12 j	--	--	<0.14
Ethyl benzene	253	<0.13	<0.042	<0.042	<0.042	<0.042	0.81	0.61	<0.51	0.58	--	--	0.19 j
Toluene	68	0.65	<0.090	<0.16	<0.10	<0.10	0.67	<0.35	<0.27	<0.31	--	--	<0.50
Xylene m & p	166	<0.22	<0.078	<0.078	<0.078	<0.078	0.36 j	<0.24	<0.22	<0.24	--	--	<0.22
Xylene o-	166	<0.11	<0.040	<0.037	<0.037	<0.037	0.29 j	0.28 j	<0.24	<0.26	--	--	<0.11
	<u>SVOCs</u>												
Pentachlorophenol	5.5	<b>25</b>	<b>23</b>	<b>110</b>	<b>110</b>	<b>16</b>	<0.080	<0.080	0.11 j	<0.80	--	<0.080	1.9
Benzo(a)anthracene	0.02	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	--	<0.0026	<0.0026
Anthracene	0.035	0.020	0.023	<0.0036	<0.0036	0.022	<b>0.24</b>	<b>0.21</b>	<0.20	<b>0.21</b>	--	<b>0.035</b>	<0.081
1,6-Dinitropyrene	--	--	--	--	--	--	--	--	--	--	<0.0056	--	--
1,8-Dinitropyrene	--	--	--	--	--	--	--	--	--	--	<0.0044	--	--
1-Nitropyrene	--	--	--	--	--	--	--	--	--	--	<0.0011	--	--
2-Nitrofluorene	--	--	--	--	--	--	--	--	--	--	<0.00094	--	--
3-Methylcholanthrene	--	--	--	--	--	--	--	--	--	--	<0.00095	--	--
5-Methylchrysene	--	--	--	--	--	--	--	--	--	--	<0.00093	--	--
5-Nitroacenaphthene	--	--	--	--	--	--	--	--	--	--	<0.0018	--	--
6-Nitrochrysene	--	--	--	--	--	--	--	--	--	--	<0.0019	--	--
7,12-Dimethylbenz(a)anthracene	--	--	--	--	--	--	--	--	--	--	<0.002	--	--
7h-Dibenzo(c,g)carbazole	--	--	--	--	--	--	--	--	--	--	<0.00086	--	--
Benzo(j)fluoranthene	--	--	--	--	--	--	--	--	--	--	<0.011	--	--
Dibenz(a,h)acridine	--	--	--	--	--	--	--	--	--	--	<0.0029	--	--
Dibenz(a,j)acridine	--	--	--	--	--	--	--	--	--	--	<0.0041	--	--
Dibenz(a,e)pyrene	--	--	--	--	--	--	--	--	--	--	<0.00074	--	--
Dibenz(a,h)pyrene	--	--	--	--	--	--	--	--	--	--	<0.003	--	--
Dibenz(a,i)pyrene	--	--	--	--	--	--	--	--	--	--	<0.0015	--	--
Dibenz(a,l)pyrene	--	--	--	--	--	--	--	--	--	--	<0.0025	--	--

**Table 14**  
**Groundwater Quality Data - Additional Parameters and Intervention Limits**  
**OU1 - Treating Facility Site**  
**St. Regis Paper Company Site**  
(bconcentrations in ug/L, unless noted otherwise)

Location Date Lab Dup	Intervention Limits	W212 3/27/2008 CAS	W212 5/26/2008 CAS	W212 8/22/2008 CAS	W212 8/22/2008 CAS	W212 11/20/2008 DUP	W213 3/27/2008 CAS	W213 5/26/2008 CAS	W213 8/22/2008 CAS	W213 11/20/2008 CAS	W215 5/26/2008 Legend	W215 5/26/2008 CAS	W220 3/27/2008 CAS	
<b>Exceedance Key</b>	<b>Bold</b>													
	<u>Dioxins, pg/L</u>													
<b>2,3,7,8-TCDD</b>	0.0038	<0.373	<0.523	<0.192	<0.203	<0.122	<0.269	<0.256	<0.319	<0.195	--	--	<0.288	
<b>1,2,3,7,8-Dioxin penta</b>	0.0084	<0.224	<0.419	<0.371	<0.353	<0.164	<0.194	<0.286	<0.354	<0.334	--	--	<0.235	
<b>1,2,3,4,7,8-Dioxin, hexa</b>	0.1267	<0.162	<0.261	<0.616	<0.657	<0.403	<0.111	<0.281	<0.942	<0.713	--	--	<0.121	
<b>1,2,3,6,7,8-Dioxin, hexa</b>	0.38	<0.160	<0.240	<0.503	<0.537	<0.356	<0.110	0.653 j	<0.770	<0.583	--	--	<0.121	
<b>1,2,3,7,8,9-Dioxin, hexa</b>	0.38	<0.163	<0.248	<0.550	<0.587	<0.387	<0.112	<0.267	<0.842	<0.636	--	--	<0.121	
<b>1,2,3,4,6,7,8-Dioxin, hepta</b>	7.6	1.39 j	1.48 j	<1.90	<2.31	<1.61	1.52 j	17.4 j	<4.72	<6.72	--	--	<0.991	
<b>Dioxin octa</b>	380	<11.1	<10.7	<15.1	<25.2	<6.26	<12.1	<211	<39.6	<48.9	--	--	<8.30	
<b>2,3,7,8-TCDF</b>	0.0475	<0.293	<0.382	<0.203	<0.200	<0.150	<0.222	<0.213	<0.206	<0.195	--	--	<0.264	
<b>1,2,3,7,8-Dibenzofuran, penta</b>	0.38	<0.169	<0.219	<0.206	<0.158	<0.129	<0.179	<0.200	<0.264	<0.207	--	--	<0.183	
<b>2,3,4,7,8-Dibenzofuran, penta</b>	0.00475	<0.167	<0.214	<0.200	<0.155	<0.127	<0.175	<0.196	<0.258	<0.202	--	--	<0.180	
<b>1,2,3,4,7,8-Dibenzofuran, hexa</b>	0.475	<0.133	<0.260	<0.252	<0.249	<0.0902	<0.0889	0.466 j	<0.262	<0.208	--	--	<0.124	
<b>1,2,3,6,7,8-Dibenzofuran, hexa</b>	0.19	<0.140	<0.257	<0.236	<0.232	<0.0874	<0.0926	<0.206	<0.245	<0.195	--	--	<0.129	
<b>1,2,3,7,8,9-Dibenzofuran, hexa</b>	0.0633	<0.172	<0.296	<0.290	<0.286	<0.113	<0.115	<0.237	<0.300	<0.239	--	--	<0.160	
<b>2,3,4,6,7,8-Dibenzofuran, hexa</b>	0.0543	<0.147	<0.268	<0.266	<0.263	<0.0969	<0.0981	<0.215	<0.277	<0.220	--	--	<0.136	
<b>1,2,3,4,6,7,8-Dibenzofuran, hepta</b>	38	<0.159	<0.294	<0.430	<0.299	<0.143	<0.126	3.56 j	1.09 j	2.38 j	--	--	<0.148	
<b>1,2,3,4,7,8,9-Dibenzofuran, hepta</b>	0.95	<0.208	<0.363	<0.567	<0.395	<0.196	<0.166	<0.287	<0.909	<0.249	--	--	<0.193	
<b>Dibenzofuran octa</b>	190	0.968 j EMPC	<0.828	<1.70	<2.70	0.427	1.25 j	20.2 j	<5.50	5.89	--	--	<0.387	

**Table 14**  
**Groundwater Quality Data - Additional Parameters and Intervention Limits**  
**OU1 - Treating Facility Site**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L, unless noted otherwise)**

Location Date Lab Dup	Intervention Limits	W220 5/26/2008 Legend DUP	W220 5/26/2008 Legend CAS	W220 5/26/2008 CAS	W220 5/26/2008 DUP	W220 8/23/2008 CAS	W220 11/19/2008 CAS
<b>Exceedance Key</b>							
<b>TPHs</b>							
Diesel Range Organics	200	--	--	180	<150	<67	--
Diesel Range Organics-Silica gel cleanup	200	--	--	--	--	--	<27
<b>VOCs</b>							
Benzene	114	--	--	<0.045	<0.045	<0.045	<0.045
Ethyl benzene	253	--	--	0.11 j	0.10 j	<0.042	<0.080
Toluene	68	--	--	<0.18	<0.14	<0.090	<0.14
Xylene m & p	166	--	--	<0.11	<0.078	<0.078	<0.078
Xylene o-	166	--	--	<0.060	<0.050	<0.040	<0.050
<b>SVOCs</b>							
Pentachlorophenol	5.5	--	--	<b>17</b>	<b>17</b>	0.50 p	<b>17</b>
Benzo(a)anthracene	0.02	--	--	<0.0048	<0.0026	<0.0026	<0.0026
Anthracene	0.035	--	--	<b>0.098</b>	<b>0.088</b>	<b>0.048</b>	<b>0.084</b>
1,6-Dinitropyrene	--	<0.0056	<0.0056	--	--	--	--
1,8-Dinitropyrene	--	<0.0044	<0.0044	--	--	--	--
1-Nitropyrene	--	<0.0011	<0.0011	--	--	--	--
2-Nitrofluorene	--	<0.00094	<0.00094	--	--	--	--
3-Methylcholanthrene	--	<0.00095	<0.00095	--	--	--	--
5-Methylchrysene	--	<0.00093	<0.00093	--	--	--	--
5-Nitroacenaphthene	--	<0.0018	<0.0018	--	--	--	--
6-Nitrochrysene	--	<0.0019	<0.0019	--	--	--	--
7,12-Dimethylbenz(a)anthracene	--	<0.002	<0.002	--	--	--	--
7h-Dibenzo(c,g)carbazole	--	<0.00086	<0.00086	--	--	--	--
Benzo(j)fluoranthene	--	<0.011	<0.011	--	--	--	--
Dibenz(a,h)acridine	--	<0.0029	<0.0029	--	--	--	--
Dibenz(a,j)acridine	--	<0.0041 *	<0.0041	--	--	--	--
Dibenzo(a,e)pyrene	--	<0.00074	<0.00074	--	--	--	--
Dibenzo(a,h)pyrene	--	<0.003	<0.003	--	--	--	--
Dibenzo(a,i)pyrene	--	<0.0015	<0.0015	--	--	--	--
Dibenzo(a,l)pyrene	--	<0.0025	<0.0025	--	--	--	--

**Table 14**  
**Groundwater Quality Data - Additional Parameters and Intervention Limits**  
**OU1 - Treating Facility Site**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L, unless noted otherwise)**

Location Date Lab Dup	Intervention Limits Legend	W220 5/26/2008 Legend DUP	W220 5/26/2008 Legend CAS	W220 5/26/2008 CAS	W220 5/26/2008 DUP	W220 8/23/2008 CAS	W220 11/19/2008 CAS
<b>Exceedance Key</b>	<b>Bold</b>						
<b>Dioxins, pg/L</b>							
<b>2,3,7,8-TCDD</b>	0.0038	--	--	<0.170	<0.114	<0.526	<0.185
<b>1,2,3,7,8-Dioxin penta</b>	0.0084	--	--	<0.157	<0.0965	<0.450	<0.312
<b>1,2,3,4,7,8-Dioxin, hexa</b>	0.1267	--	--	<0.132	<0.155	<0.603	<0.615
<b>1,2,3,6,7,8-Dioxin, hexa</b>	0.38	--	--	<0.121	<0.150	<0.493	<0.502
<b>1,2,3,7,8,9-Dioxin, hexa</b>	0.38	--	--	<0.125	<0.163	<0.538	<0.549
<b>1,2,3,4,6,7,8-Dioxin, hepta</b>	7.6	--	--	<0.626	<0.205	<2.40	<0.425
<b>Dioxin octa</b>	380	--	--	<3.18	<3.40	<25.3	<4.75
<b>2,3,7,8-TCDF</b>	0.0475	--	--	<0.137	<0.107	<0.472	<0.164
<b>1,2,3,7,8-Dibenzofuran, penta</b>	0.38	--	--	<0.110	<0.108	<0.320	<0.160
<b>2,3,4,7,8-Dibenzofuran, penta</b>	0.00475	--	--	<0.108	<0.104	<0.312	<0.156
<b>1,2,3,4,7,8-Dibenzofuran, hexa</b>	0.475	--	--	<0.0630	<0.113	<0.203	<0.130
<b>1,2,3,6,7,8-Dibenzofuran, hexa</b>	0.19	--	--	<0.0620	<0.115	<0.190	<0.122
<b>1,2,3,7,8,9-Dibenzofuran, hexa</b>	0.0633	--	--	<0.0710	<0.153	<0.233	<0.150
<b>2,3,4,6,7,8-Dibenzofuran, hexa</b>	0.0543	--	--	<0.0650	<0.128	<0.214	<0.138
<b>1,2,3,4,6,7,8-Dibenzofuran, hepta</b>	38	--	--	<0.101	<0.238	0.692 j	<0.205
<b>1,2,3,4,7,8,9-Dibenzofuran, hepta</b>	0.95	--	--	<0.125	<0.317	<0.518	<0.270
<b>Dibenzofuran octa</b>	190	--	--	<0.210	<0.391	<2.29	<0.319

**Table 14**  
**Groundwater Quality Data - Additional Parameters and Intervention Limits**  
**OU1 - Treating Facility Site**  
**St. Regis Paper Company Site**  
**Footnotes**

DUP	Duplicate sample.
--	No criteria/not analyzed.
*	Estimated value, QA/QC criteria not met.
AT	Sample chromatogram is noted to be atypical of a petroleum product.
b	Potential false positive value based on blank data validation procedures.
j	Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.
p	Relative percent difference is >40% (25% CLP pesticides) between primary and confirmation GC columns.
EMPC	Estimated maximum possible concentration.

**Table 15**  
**Groundwater Quality Data - Surficial Aquifer**  
**OU2 - Containment Vault Area**  
**St. Regis Paper Company Site**  
**Footnotes**

Location	Cass Lake	W124 5/17/2008	W125 5/17/2008	W126 5/17/2008	W127 5/17/2008	W128 5/17/2008	W129 5/17/2008	W130 5/16/2008
Date	DWC	CAS	CAS	CAS	CAS	CAS	CAS	
Lab								
<b>Exceedance Key</b>	<b>Bold</b>							
<b>Benzo(a)anthracene</b>	--	<0.0026	<0.0026	<0.0027	<0.0026	<0.0026	<0.0026	<0.0028
<b>Chrysene</b>	--	<0.0034	<0.0034	<0.0035	<0.0034	<0.0034	<0.0034	<0.0036
<b>Benzo(b)fluoranthene</b>	--	<0.0023	<0.0023	<0.0024	<0.0023	<0.0023	<0.0023	<0.0025
<b>Benzo(k)fluoranthene</b>	--	<0.0025	<0.0025	<0.0026	<0.0025	<0.0025	<0.0025	<0.0027
<b>Benzo(a)pyrene</b>	--	<0.0043	<0.0043	<0.0044	<0.0043	<0.0043	<0.0043	<0.0046
<b>Indeno(1,2,3-cd)pyrene</b>	--	<0.0026	<0.0026	<0.0027	<0.0026	<0.0026	<0.0026	<0.0028
<b>Dibenz(a,h)anthracene</b>	--	<0.0025	<0.0025	<0.0026	<0.0025	<0.0025	<0.0025	<0.0027
<b>BaP equivalent, non-detects at half of the detection limit.<sup>1</sup></b>	0.2	<0.0034	<0.0034	<0.0035	<0.0034	<0.0034	<0.0034	<0.0036
<b>BaP equivalent, non-detects at zero for the detection limit.<sup>2</sup></b>	0.2	ND						
<b>2-Methylnaphthalene</b>	--	<0.0091	<0.0056	<0.013	<0.0063	<0.017 j	<0.0060	<0.015
<b>Naphthalene</b>	300	<0.059	<0.040	<0.077	<0.049	<0.092	<0.027	<0.086
<b>Acenaphthylene</b>	--	<0.0034	<0.0034	<0.0035	<0.0034	<0.0034	<0.0034	<0.0036
<b>Acenaphthene</b>	400	<0.0044	<0.0044	<0.0045	<0.0044	0.0059 j	<0.0044	<0.0047
<b>Fluorene</b>	300	<0.0038	<0.0038	<0.0039	<0.0038	<0.0038	<0.0038	<0.0040
<b>Phenanthrene</b>	--	<0.0050	<0.0050	<0.0051	<0.0050	<0.0050	<0.0050	<0.0053
<b>Anthracene</b>	2000	<0.0036	0.027	0.024	0.018 j	0.035	0.031	<0.0038
<b>Fluoranthene</b>	300	<0.0044	<0.0044	<0.0045	<0.0044	<0.0044	<0.0044	<0.0047
<b>Pyrene</b>	200	<0.0035	<0.0035	<0.0036	<0.0035	<0.0035	<0.0035	<0.0037
<b>Benzo(g,h,i)perylene</b>	--	<0.0029	<0.0029	<0.0030	<0.0029	<0.0029	<0.0029	<0.0031
<b>Pentachlorophenol</b>	1	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080

**Table 15**  
**Groundwater Quality Data - Surficial Aquifer**  
**OU2 - Containment Vault Area**  
**St. Regis Paper Company Site**  
**Footnotes**

DWC - Drinking Water Criteria (comprised of EPA MCLs and MN HRLs).

-- No criteria.

ND Not detected.

j Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

1 Total BaP equivalence (2002) calculated using half of the detection limit on the non detected compounds.

2 Total BaP equivalence (2002) calculated using 0 for the detection limit on the non detected compounds.

	CAS No.	Site Conc. (ug/L) dry weight	Relative Potency Factor	BaP Equivalent (ug/L)
Benzo(a)anthracene	56553	0.000	0.1	0.000
Benzo(b)fluoranthene	205992	0.000	0.1	0.000
Benzo(k)fluoranthene	207089	0.000	0.1	0.000
Benzo(a)pyrene	50328	0.000	1	0.000
Chrysene	218019	0.000	0.01	0.000
Dibenz(a,h)anthracene	53703	0.000	0.56	0.000
Indeno(1,2,3-cd)pyrene	193395	0.000	0.1	0.000

Total BaP equivalence = 0.000  
 compare this value  
 to the BaP criteria

**Table 16**  
**Groundwater Quality Data Over Time**  
**OU2 - Containment Vault Area**  
**St. Regis Paper Company and City Dump Pit Sites**

(concentrations in ug/L)

Surficial Aquifer			MW124			MW125			MW126			MW127			MW128			MW129			MW130			
Year	BaP Eq	Naph.	PCP																					
1987	0.0011 U	0.0073	6 U	0.0011 U	0.0068	6 U	0.0013 U	0.0078	6 U	0.0011 U	0.0065	6 U	0.0011 U	0.0077	6 U	---	---	---	---	---	---	---	---	---
1988	0.0023 U	0.028	6 U	0.0011 U	0.0034	6 U	0.0011 U	0.0029	6 U	0.0011 U	0.0039	6 U	0.0011 U	0.0027	6 U	---	---	---	---	---	---	---	---	---
1989	0.0011 U	0.0048	6 U	0.0011 U	0.0047	6 U	0.0011 U	0.0062	6 U	0.0011 U	0.0032	6 U	0.0011 U	0.0028	6 U	---	---	---	---	---	---	---	---	---
1990	0.0011 U	0.0047	6 U	0.0023 U	0.0038 U	6 U	0.0011 U	0.0029	6 U	0.0011 U	0.0032	6 U	0.0011 U	0.0035	6 U	---	---	---	---	---	---	---	---	---
1991	0.003 U	0.004 U	6 U	0.003 U	0.004 U	6 U	0.003 U	0.004 U	6 U	0.003 U	0.004	6 U	0.003 U	0.004 U	6 U	---	---	---	---	---	---	---	---	---
1992	0.003 U	0.004 U	6 U	0.003 U	0.004 U	6 U	0.003 U	0.004 U	6 U	0.003 U	0.004 U	6 U	0.003 U	0.004 U	6 U	0.003 U	0.0056	6 U	0.003 U	0.004 U	6 U	0.003 U	0.004 U	6 U
1993	0.003 U	0.004 U	6 U	0.003 U	0.0047	6 U	0.003 U	0.00436	6 U	---	---	---	0.003 U	0.00414	6 U	0.003 U	0.003 U	6 U	0.0059 U	0.008 U	6 U	0.003 U	0.004 U	3 U
1994	0.003 U	0.004	3 U	0.003 U	0.004	3 U	0.003 U	0.005	3 U	---	---	---	0.003 U	0.018	3 U	0.003 U	0.003	3 U	0.003 U	0.004	3 U	0.003 U	0.004	3 U
1995	0.003 U	0.003 U	3 U	0.003 U	0.004	3 U	0.003 U	0.009	3 U	---	---	---	0.003 U	0.003	3 U									
1996	9.9 U	10 U	3 U	9.9 U	10 U	50 U	9.9 U	10 U	50 U	---	---	---	9.9 U	10 U	50 U	9.9 U	10 U	50 U	9.9 U	10 U	50 U	9.9 U	10 U	50 U
1997	9.9 U	10 U	50 U	9.9 U	10 U	50 U	9.9 U	10 U	50 U	---	---	---	9.9 U	10 U	50 U	9.9 U	10 U	50 U	9.9 U	10 U	50 U	9.9 U	10 U	50 U
1998	0.099 U	0.1 U	0.5 U	0.099 U	0.1 U	0.5 U	0.099 U	0.1 U	5 U	---	---	---	0.0099 U	0.1 U	0.5 U	0.099 U	0.1 U	0.5 U	0.099 U	0.1 U	0.5 U	0.099 U	0.1 U	0.5 U
1999	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U	0.02 U	0.02 U	---	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U
2000	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U
2001	0.019 U	0.019 U	0.5 U	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	0.5 U	0.019 U	0.019 U	0.5 U	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	0.5 U
2002	0.021 U	0.021 U	3.1 U	0.02 U	0.02 U	3 U	0.02 U	0.02 U	2.9 U	0.02 U	0.02 U	2.9 U	0.02 U	0.02 U	3 U	0.021 U	0.021 U	3.1 U	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U
2003	0.02 U	0.021	0.5 U	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	0.5 U
2004	0.02 U	0.02 U	0.96 U	0.02 U	0.02 U	0.96 U	0.02 U	0.02 U	0.96 U	0.02 U	0.02 U	0.97 U	0.02 U	0.02 U	0.98 U	0.02 U	0.02 U	0.99 U	0.02 U	0.02 U	0.98 U	0.02 U	0.02 U	0.98 U
2005	0.021 U	0.021 U	0.5 U	0.021 U	0.021 U	0.5 U	0.021 U	0.021 U	0.5 U	0.022 U	0.022 U	0.5 U	0.02 U	0.022 U	0.5 U	0.021 U	0.021 U	0.5 U	0.022 U	0.022 U	0.5 U	0.022 U	0.022 U	0.5 U
2006	0.004 U	0.0081 U	0.13 U	0.004	0.0065 U	0.13 U	0.004 U	0.0023 U	0.13 U	0.004 U	0.0065 U	0.13 U	0.004 U	0.0065 U	0.13 U	0.004 U	0.0065 U	0.13 U	0.004 U	0.01 J	0.13 U	0.0043 U	0.0078 J	0.13 U
2007	0.004 U	0.0074 U	0.13 U	0.004 U	0.0065 U	0.13 U	0.0042 U	0.0068 U	0.13 U	0.0034 U	0.0042 U	0.08 U	0.0041 U	0.0066 U	0.13 U	0.0041 U	0.0066 U	0.13 U	0.0042 U	0.0088 U	0.13 U	0.0042 U	0.0088 U	0.13 U
2008	0.0034 U	0.059 U	0.080 U	0.0034 U	0.040 U	0.080 U	0.0035 U	0.077 U	0.080 U	0.0034 U	0.049 U	0.080 U	0.0034 U	0.092 U	0.080 U	0.0034 U	0.027 U	0.080 U	0.0036 U	0.086 U	0.080 U	0.0036 U	0.086 U	0.080 U

--- No sample collected or analyzed.

a Estimated value, calculated using some or all values that are estimates.

U Value is non-detect at the method reporting limit.

BaP Eq - Benzo(a)pyrene equivalency calculated at ND = 1/2 DL.

Naph. - Naphthalene concentration

PCP - Pentachlorophenol concentration

**Table 17**  
**Groundwater Quality Data - Surficial Aquifer**  
**OU3 - City Dump Area**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location Date Lab Dup	Cass Lake DWC	W2106 5/27/2008 CAS	W2106 5/27/2008 CAS	W2127 5/21/2008 CAS	W2128 5/28/2008 CAS	W2128 8/22/2008 CAS	W2129 5/21/2008 CAS	W2134 5/20/2008 CAS	W2135 5/20/2008 CAS
<b>Exceedance Key</b>	<b>Bold</b>								
Benzo(a)anthracene	--	<0.60	<0.60	<0.0026	<0.0026	<0.0026	0.0030 j	<0.0026	<0.0026
Chrysene	--	<0.79	<0.79	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034
Benzo(b)fluoranthene	--	<0.59	<0.59	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023
Benzo(k)fluoranthene	--	<0.83	<0.83	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Benzo(a)pyrene	--	<0.66	<0.66	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043
Indeno(1,2,3-cd)pyrene	--	<0.69	<0.69	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
Dibenz(a,h)anthracene	--	<0.76	<0.76	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
BaP equivalent, non-detects at half of the detection limit. <sup>1</sup>	0.2	<0.68	<0.68	<0.0034	<0.0034	<0.0034	0.0035 a	<0.0034	<0.0034
BaP equivalent, non-detects at zero for the detection limit. <sup>2</sup>	0.2	ND	ND	ND	ND	ND	0.00030 a	ND	ND
2-Methylnaphthalene	--	72 *	110 *	<0.0043	0.16	0.066	<0.0035	<0.0023	<0.0023
Naphthalene	300	120 *	290 *	0.040	1.3	<0.39	0.030	<0.0094	<0.022
Acenaphthylene	--	5.5 j	4.7 j	<0.0034	0.0063 j	<0.0034	<0.0034	<0.0034	<0.0034
Acenaphthene	400	89	91	<0.0044	0.39	0.29	<0.0044	<0.0044	<0.0044
Fluorene	300	47	45	<0.0038	0.035	<0.031	<0.0038	<0.0038	<0.0038
Phenanthrene	--	13	14	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Anthracene	2000	5.5 j	5.5 j	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036
Fluoranthene	300	<0.66	<0.66	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044
Pyrene	200	<0.74	<0.74	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035
Benzo(g,h,i)perylene	--	<0.82	<0.82	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029
Pentachlorophenol	1	16000	16000	<0.080	5.9	5.5	<0.080	<0.080	<0.080

**Table 17**  
**Groundwater Quality Data - Surficial Aquifer**  
**OU3 - City Dump Area**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location Date Lab	Cass Lake DWC	W2106 5/27/2008 CAS	W2128 5/28/2008 CAS	W2128 8/22/2008 CAS
<b>Exceedance Key</b>	<b>Bold</b>			
<b>2,3,7,8-TCDD</b>	--	<0.146	<0.146	<0.320
<b>1,2,3,7,8-Dioxin penta</b>	--	<0.140	<0.179	<0.390
<b>1,2,3,4,7,8-Dioxin, hexa</b>	--	0.395 EMPC	<0.127	<0.898
<b>1,2,3,6,7,8-Dioxin, hexa</b>	--	2.27 j	<0.123	<0.734
<b>1,2,3,7,8,9-Dioxin, hexa</b>	--	1.33 EMPC	<0.133	<0.803
<b>1,2,3,4,6,7,8-Dioxin, hepta</b>	--	173	<1.79	<1.69
<b>Dioxin octa</b>	--	3360	18.0	<15.4
<b>2,3,7,8-TCDF</b>	--	<0.208	<0.181	<0.237
<b>1,2,3,7,8-Dibenzofuran, penta</b>	--	<0.140	<0.141	<0.225
<b>2,3,4,7,8-Dibenzofuran, penta</b>	--	<0.135	<0.136	<0.219
<b>1,2,3,4,7,8-Dibenzofuran, hexa</b>	--	1.24 j	<0.148	<0.257
<b>1,2,3,6,7,8-Dibenzofuran, hexa</b>	--	0.620 j	<0.151	<0.240
<b>1,2,3,7,8,9-Dibenzofuran, hexa</b>	--	<0.201	<0.200	<0.294
<b>2,3,4,6,7,8-Dibenzofuran, hexa</b>	--	<0.167	<0.167	<0.271
<b>1,2,3,4,6,7,8-Dibenzofuran, hepta</b>	--	27.7	<0.187	<0.414
<b>1,2,3,4,7,8,9-Dibenzofuran, hepta</b>	--	3.42 j	<0.249	<0.547
<b>Dibenzofuran octa</b>	--	323	1.70 j	<2.17
<b>TEQ<sub>DF</sub> WHO05<sup>3</sup>, non-detects at 1/2 of the detection limit</b>	30	3.84 a	0.264	0.594 U
<b>TEQ<sub>DF</sub> WHO05<sup>4</sup>, non-detects at zero</b>	30	3.65 a	0.00591	ND
<b>TEQ<sub>DF</sub> WHO98<sup>5</sup>, non-detects at zero</b>	30	3.65 a	0.00591	ND
<b>TEQ<sub>DF</sub> WHO98<sup>6</sup>, non-detects at 1/2 of the detection limit</b>	30	3.84 a	0.264	0.594 U
<b>Dioxin tetra, Total</b>	--	<0.146	<0.146	<0.320
<b>Dioxin penta, Total</b>	--	8.36 j	<0.179	<0.390
<b>Dioxin, hexa, Total</b>	--	12.5 j	<0.123	<0.734
<b>Dioxin, hepta, Total</b>	--	353	1.79 j	<3.69
<b>Dibenzofuran tetra, Total</b>	--	1.68 j	<0.181	<0.237
<b>Dibenzofuran penta, Total</b>	--	0.924 j	<0.136	<0.219
<b>Dibenzofuran, hexa, Total</b>	--	18.2 j	<0.151	<0.240
<b>Dibenzofuran, hepta, Total</b>	--	146	0.786 j	<0.414

**Table 17**  
**Groundwater Quality Data - Surficial Aquifer**  
**OU3 - City Dump Area**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

DWC - Drinking Water Criteria (comprised of EPA MCLs and MN HRLs).

DUP      Duplicate sample.  
 --      No criteria.  
 \*      Estimated value, QA/QC criteria not met.  
 ND      Not detected.  
 a      Estimated value, calculated using some or all values that are estimates.  
 j      Reported value is less than the stated laboratory quantitation limit and is  
       considered an estimated value.  
 EMPC    Estimated maximum possible concentration.

1 Total BaP equivalence (2002) calculated using half of the detection limit on the non detected compounds.

2 Total BaP equivalence (2002) calculated using 0 for the detection limit on the non detected compounds.

	CAS No.	Site Conc. dry weight (ug/L)	Relative Potency Factor	BaP Equivalent (ug/L)
Benzo(a)anthracene	56553	0.000	0.1	0.000
Benzo(b)fluoranthene	205992	0.000	0.1	0.000
Benzo(k)fluoranthene	207089	0.000	0.1	0.000
Benzo(a)pyrene	50328	0.000	1	0.000
Chrysene	218019	0.000	0.01	0.000
Dibenz(a,h)anthracene	53703	0.000	0.56	0.000
Indeno(1,2,3-cd)pyrene	193395	0.000	0.1	0.000

Total BaP equivalence = 0.000  
 compare this value  
 to the BaP criteria

**Table 17**  
**Groundwater Quality Data - Surficial Aquifer**  
**OU3 - City Dump Area**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

3 Total TEQ<sub>DF</sub> equivalents calculated using half of the detection limit on the non detected compounds.

4 Total TEQ<sub>DF</sub> equivalents calculated using zero for the detection limit on the non detected compounds.

	Site Conc. (ng/kg) dry weight	Toxicity Potency Factor	TEQ <sub>DF</sub> Equivalent (WHO05) <sup>q</sup> (ng/kg)
2,3,7,8-TCDD	0.000	1	0.000
1,2,3,7,8-Dioxin penta	0.000	1	0.000
1,2,3,4,7,8-Dioxin, hexa	0.000	0.1	0.000
1,2,3,6,7,8-Dioxin, hexa	0.000	0.1	0.000
1,2,3,7,8,9-Dioxin, hexa	0.000	0.1	0.000
1,2,3,4,6,7,8-Dioxin, hepta	0.000	0.01	0.000
Dioxin octa	0.000	0.0003	0.000
2,3,7,8-TCDF	0.000	0.1	0.000
1,2,3,7,8-Dibenzofuran, penta	0.000	0.03	0.000
2,3,4,7,8-Dibenzofuran, penta	0.000	0.3	0.000
1,2,3,4,7,8-Dibenzofuran, hexa	0.000	0.1	0.000
1,2,3,6,7,8-Dibenzofuran, hexa	0.000	0.1	0.000
2,3,4,6,7,8-Dibenzofuran, hexa	0.000	0.1	0.000
1,2,3,7,8,9-Dibenzofuran, hexa	0.000	0.1	0.000
1,2,3,4,6,7,8-Dibenzofuran, hepta	0.000	0.01	0.000
1,2,3,4,7,8,9-Dibenzofuran, hepta	0.000	0.01	0.000
Dibenzofuran octa	0.000	0.0003	0.000
Total TEQ <sub>DF</sub> =			0.000

q Van den Berg, et al., The 2005 World Health Organization Re-evaluation of Human and Mammalian.

**Table 17**  
**Groundwater Quality Data - Surficial Aquifer**  
**OU3 - City Dump Area**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

5 Total TEQ<sub>DF</sub> equivalents calculated using half of the detection limit on the non detected compounds.  
 6 Total TEQ<sub>DF</sub> equivalents calculated using zero for the detection limit on the non detected compounds.

	Site Conc. (ng/kg) dry weight	Relative Potency Factor	TCDD Equivalent (WHO98)
2,3,7,8-TCDD	0.000	1	0.000
1,2,3,7,8-Dioxin penta	0.000	1	0.000
1,2,3,4,7,8-Dioxin, hexa	0.000	0.1	0.000
1,2,3,6,7,8-Dioxin, hexa	0.000	0.1	0.000
1,2,3,7,8,9-Dioxin, hexa	0.000	0.1	0.000
1,2,3,4,6,7,8-Dioxin, hepta	0.000	0.01	0.000
Dioxin octa	0.000	0.0001	0.000
2,3,7,8-TCDF	0.000	0.1	0.000
1,2,3,7,8-Dibenzofuran, penta	0.000	0.05	0.000
2,3,4,7,8-Dibenzofuran, penta	0.000	0.5	0.000
1,2,3,4,7,8-Dibenzofuran, hexa	0.000	0.1	0.000
1,2,3,6,7,8-Dibenzofuran, hexa	0.000	0.1	0.000
2,3,4,6,7,8-Dibenzofuran, hexa	0.000	0.1	0.000
1,2,3,7,8,9-Dibenzofuran, hexa	0.000	0.1	0.000
1,2,3,4,6,7,8-Dibenzofuran, hepta	0.000	0.01	0.000
1,2,3,4,7,8,9-Dibenzofuran, hepta	0.000	0.01	0.000
Dibenzofuran octa	0.000	0.0001	0.000
Total TCDD = equivalents			0.000

**Table 18**  
**Groundwater Quality Data - Base of Surficial Aquifer**  
**OU3 - City Dump Area**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location	Cass Lake	W2228 5/28/2008	W2233 3/27/2008	W2233 S/20/2008	W2233 8/22/2008	W2233 11/19/2008	W2234 5/20/2008	W2234 S/20/2008	W2236 3/28/2008	W2236 5/22/2008	W2236 8/23/2008	W2236 11/20/2008	W2236 11/20/2008	W2238 5/28/2008	W2238 5/28/2008
Date	DWC	CAS	CAS	CAS	CAS	CAS	CAS	CAS DUP	CAS	CAS	CAS	CAS	CAS DUP	CAS	CAS DUP
<b>Exceedance Key</b>	<b>Bold</b>														
<b>Benzo(a)anthracene</b>	--	<0.60	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0034	0.0054 j	0.0044 j	<0.0026	<0.0026	<0.0026	<0.60	<0.60
<b>Chrysene</b>	--	<0.79	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	0.0046 j	<0.0045	<0.0034	<0.0034	<0.0034	<0.79	<0.79
<b>Benzo(b)fluoranthene</b>	--	<0.59	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0039	<0.0023	<0.0023	<0.0023	<0.59	<0.59
<b>Benzo(k)fluoranthene</b>	--	<0.83	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0042	<0.0025	<0.0025	<0.0025	<0.83	<0.83
<b>Benzo(a)pyrene</b>	--	<0.66	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.66	<0.66
<b>Indeno(1,2,3-cd)pyrene</b>	--	<0.69	<0.0026	<0.0026	<0.0026	<0.0026	0.0032 j	<0.0026	<0.0026	<0.0056	<0.0026	<0.0026	<0.0026	<0.69	<0.69
<b>Dibenz(a,h)anthracene</b>	--	<0.76	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0050	<0.0025	<0.0025	<0.0025	<0.76	<0.76
<b>BaP equivalent, non-detects at half of the detection limit.<sup>1</sup></b>	0.2	<0.75	<0.0034	<0.0034	<0.0034	<0.0034	0.0036 a	<0.0034	0.0038 a	0.0045 a	<0.0034	<0.0034	<0.0034	<0.75	<0.75
<b>BaP equivalent, non-detects at zero for the detection limit.<sup>2</sup></b>	0.2	ND	ND	ND	ND	ND	0.00032 a	ND	0.00059 a	ND a	ND	ND	ND	ND	ND
<b>2-Methylnaphthalene</b>	--	<0.24	0.013 j	<0.0026	<0.016	<0.0075	<0.0023	<0.0023	<0.0023	<0.0069	<0.0023	<0.0023	<0.0023	11	12
<b>Naphthalene</b>	300	<0.37	<0.078	<0.032	<0.075	<0.025	<0.015	<0.011	<0.0038	<0.031	<0.017	<0.0046	<0.0035	99	120
<b>Acenaphthylene</b>	--	<0.24	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.24	<0.24
<b>Acenaphthene</b>	400	<0.29	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	13	14
<b>Fluorene</b>	300	<0.33	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	8.4 j	7.9 j
<b>Phenanthrene</b>	--	<0.49	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.12	0.0067 j
<b>Anthracene</b>	2000	<0.62	0.0059 j	<0.0036	<0.0036	0.0053 j	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	0.63 j	<0.62
<b>Fluoranthene</b>	300	<0.66	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0050 j	<0.0044	<0.0044	<0.0044	<0.0044	<0.66	<0.66
<b>Pyrene</b>	200	<0.74	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0048 j	<0.0035	<0.0035	<0.0035	<0.0035	<0.74	<0.74
<b>Benzo(g,h,i)perylene</b>	--	<0.82	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0043	<0.0029	<0.0029	<0.0029	<0.82	<0.82
<b>Pentachlorophenol</b>	1	<2.5	<0.080	<0.080	<0.080	<0.80	<0.080	<0.080	<0.080	<0.080	<0.80	<0.80	<0.80	3.4 j	4.1 j

**Table 18**  
**Groundwater Quality Data - Base of Surficial Aquifer**  
**OU3 - City Dump Area**  
**St. Regis Paper Company Site**  
**Footnotes**

DWC - Drinking Water Criteria (comprised of EPA MCLs and MN HRLs).

- DUP Duplicate sample.
- No criteria.
- ND Not detected.
- a Estimated value, calculated using some or all values that are estimates.
- j Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

1 Total BaP equivalence (2002) calculated using half of the detection limit on the non detected compounds.

2 Total BaP equivalence (2002) calculated using 0 for the detection limit on the non detected compounds.

	CAS No.	Site Conc. (ug/L) dry weight	Relative Potency Factor	BaP Equivalent (ug/L)
Benzo(a)anthracene	56553	0.000	0.1	0.000
Benzo(b)fluoranthene	205992	0.000	0.1	0.000
Benzo(k)fluoranthene	207089	0.000	0.1	0.000
Benzo(a)pyrene	50328	0.000	1	0.000
Chrysene	218019	0.000	0.01	0.000
Dibenz(a,h)anthracene	53703	0.000	0.56	0.000
Indeno(1,2,3-cd)pyrene	193395	0.000	0.1	0.000

Total BaP equivalence = 0.000  
 compare this value  
 to the BaP criteria

**Table 19**  
**Groundwater Quality Data - Lower Aquifer**  
**OU3 - City Dump Area**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location Date Lab	Cass Lake DWC	W2301 5/22/2008 CAS	W2325 5/21/2008 CAS	W2326 5/21/2008 CAS	W2329 5/21/2008 CAS	W2333 5/20/2008 CAS	W2335 5/24/2008 CAS	W2336 3/28/2008 CAS	W2336 5/22/2008 CAS	W2336 8/23/2008 CAS	W2336 11/20/2008 CAS
<b>Exceedance Key</b>	<b>Bold</b>										
Benzo(a)anthracene	--	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
Chrysene	--	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.034	<0.0034	<0.0034
Benzo(b)fluoranthene	--	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023
Benzo(k)fluoranthene	--	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Benzo(a)pyrene	--	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043
Indeno(1,2,3-cd)pyrene	--	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
Dibenz(a,h)anthracene	--	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
BaP equivalent, non-detects at half of the detection limit. <sup>1</sup>	0.2	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0035	<0.0034	<0.0034
BaP equivalent, non-detects at zero for the detection limit. <sup>2</sup>	0.2	ND									
2-Methylnaphthalene	--	<0.0068	<0.0039	<0.0044	<0.0023	<0.0023	<0.0036	<0.0023	<0.0095	<0.0023	<0.0023
Naphthalene	300	0.035	0.020	0.022	0.015 j	<0.017	<0.023	<0.052	<0.37	0.042	<0.014
Acenaphthylene	--	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0038	<0.0034	<0.0034
Acenaphthene	400	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044
Fluorene	300	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.031	<0.0038	<0.0038
Phenanthrene	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0051	<0.0050	<0.063	<0.0050	0.0095 j
Anthracene	2000	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0043	<0.0036	<0.0036
Fluoranthene	300	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.043	<0.0044	<0.0044
Pyrene	200	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.029	<0.0035	<0.0035
Benzo(g,h,i)perylene	--	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0064	<0.0029	<0.0029
Pentachlorophenol	1	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.80

**Table 19**  
**Groundwater Quality Data - Lower Aquifer**  
**OU3 - City Dump Area**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

DWC - Drinking Water Criteria (comprised of EPA MCLs and MN HRLs).

-- No criteria.

\* Estimated value, QA/QC criteria not met.

ND Not detected.

j Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

1 Total BaP equivalence (2002) calculated using half of the detection limit on the non detected compounds.

2 Total BaP equivalence (2002) calculated using 0 for the detection limit on the non detected compounds.

	CAS No.	Site Conc. dry weight (ug/L)	Relative Potency Factor	BaP Equivalent (ug/L)
Benzo(a)anthracene	56553	0.000	0.1	0.000
Benzo(b)fluoranthene	205992	0.000	0.1	0.000
Benzo(k)fluoranthene	207089	0.000	0.1	0.000
Benzo(a)pyrene	50328	0.000	1	0.000
Chrysene	218019	0.000	0.01	0.000
Dibenz(a,h)anthracene	53703	0.000	0.56	0.000
Indeno(1,2,3-cd)pyrene	193395	0.000	0.1	0.000

Total BaP equivalence = 0.000

compare this value  
to the BaP criteria

**Table 20**  
**Water Quality Data Over Time**  
**OU3 - City Dump Pit Site**  
**City Dump Pit Site**  
**(concentrations in ug/L)**

Year	MW2106			MW2127			MW2128			MW2129			MW2134			MW2135		
	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP
DWC	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1
1987	--	--	--	0.0011 U	0.0038	6 U	5.9 U	6 U	3400	0.0028 U	0.012	9.1	5.9 U	6 U	11000	0.0011 U	0.017	6 U
1988	--	--	--	0.0013	0.0074	6 U	5.9 U	6 U	2400	0.0011 U	0.0045	6 U	5.9 U	6 U	4600	0.0023 U	0.009	6 U
1989	--	--	--	0.0011 U	0.073	6 U	490 U	1200	1200	9.9 U	10 U	10 U	0.0045 U	0.013	74	0.0011 U	0.0036	6 U
1990	--	--	--	0.0011 U	0.0019	6 U	9.9 U	10 U	190	0.0011 U	0.0028	6 U	9.9 U	10 U	10 U	0.0011 U	0.0021	6 U
1991	--	--	--	0.012 U	0.13	6 U	9.9 U	10 U	99	0.003 U	0.0047	6 U	9.9 U	10 U	10 U	0.0059 U	0.008 U	6 U
1992	--	--	--	0.003 U	0.004 U	6 U	9.9 U	10 U	10 U	0.003 U	0.005	6 U	9.9 U	10 U	10 U	0.003 U	0.0048	6 U
1993	--	--	--	0.003 U	0.00882	6 U	0.17 U	1.06	130	0.003 U	0.0146	6 U	0.0037 U	0.0199	6 U	0.0035	0.00847	6 U
1994	--	--	--	0.03 U	0.03 U	3 U	0.12 U	0.12 U	38	0.003 U	0.004	3 U	0.059 U	0.06 U	3 U	0.0591 U	0.06 U	3 U
1995	--	--	--	0.003 U	0.003	3 U	0.59 U	13	120	0.003 U	0.004	3 U	0.003 U	0.004	3 U	0.003 U	0.003 U	3 U
1996	--	--	--	9.9 U	10 U	50 U	--	--	--	9.9 U	10 U	50 U	--	--	--	9.9 U	10 U	50 U
1997	--	--	--	9.9 U	10 U	50 U	9.9 U	96	79	9.9 U	10 U	50 U	9.9 U	10 U	50 U	9.9 U	10 U	50 U
1998	--	--	--	0.099 U	0.1 U	5 U	--	--	--	0.099 U	0.1 U	5 U	--	--	--	0.099 U	0.1 U	5 U
1999	--	--	--	0.02 U	0.02 U	3 U	0.02 U	23	3.7	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U	0.02 U	0.02 U	--
2000	--	--	--	0.02 U	0.02 U	3 U	0.02 U	23	4	0.02 U	0.02 U	3 U	--	--	--	0.02 U	0.02 U	3 U
2001	140 U	1500 J	2,600 J	0.02 U	0.02 U	0.5 U	0.02 U	49	48	0.02 U	0.02 U	1.5	0.019 U	0.019 U	0.5 U	0.019 U	0.019 U	0.5 U
2002	--	--	--	0.02 U	0.02 U	2.9 U	0.02 U	43	2.9 U	0.02 U	0.034	0.5 U	--	--	--	0.021 U	0.046	2.2 U
2003	--	--	--	0.02 U	0.02 U	0.5 U	0.02 U	25	25	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	0.5 U
2004	--	--	--	0.02 U	0.02 U	0.96 U	0.02 U	1.8	5.5	0.02 U	0.02 U	0.5 U	--	--	--	0.02 U	0.02 U	0.96 U
2005	--	--	--	0.02 U	0.02 U	0.5 U	0.02 U	6.1	6.4	0.02 U	0.02 U	0.5 U	0.021 U	0.021 U	0.5 U	0.021 U	0.021 U	0.5 U
2006	0.2 U	2,600 J	56,000	0.004 U	0.012 U	0.13 U	0.004 U	13	24	0.0041 U	0.0074 J	0.13 U	0.004 U	0.0065 U	0.13 U	0.004 U	0.017 U	0.13 U
2007	0.68 U	0.98 J	22,000	0.004 U	0.0069 U	0.13 U	0.004 U	0.014 U	5.1	0.0042 U	0.0068 U	0.13 U	0.004 U	0.0065 U	0.13 U	0.004 U	0.0079 J	0.13 U
2008	0.68 U	120 J	16,000	0.0034 U	0.040	0.080 U	0.0034 U	1.3	5.9	0.0035 a	0.030	0.080 U	0.0034 U	0.0094 U	0.080 U	0.0034 U	0.022 U	0.080 U

-- No sample collected or analyzed.

\* Estimated value, QA/QC criteria not met.

a Estimated value, calculated using some or all values that are estimates.

J Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

U Value is non-detect at the method reporting limit.

Shaded cell indicates concentration above response action level (DWC).

BaP Eq - Benzo(a)pyrene equivalency calculated at ND = 1/2 DL.

Naph. - Naphthalene concentration

PCP - Pentachlorophenol concentration

**Table 20**  
**Water Quality Data Over Time**  
**OU3 - City Dump Pit Site**  
**City Dump Pit Site**  
**(concentrations in ug/L)**

Year	Base of Surficial Aquifer														
	MW2228			MW2233			MW2234			MW2236			MW2238		
DWC	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP
1987	--	--	--	--	--	--	0.0011 U	0.022	6 U	--	--	--	--	--	--
1988	--	--	--	--	--	--	0.0023 U	0.056	6 U	--	--	--	--	--	--
1989	--	--	--	--	--	--	0.0013 U	0.11	6 U	--	--	--	--	--	--
1990	--	--	--	--	--	--	0.003 U	0.0045	6 U	--	--	--	--	--	--
1991	--	--	--	--	--	--	9.9 U	10 U	10 U	--	--	--	--	--	--
1992	--	--	--	--	--	--	0.071 U	0.096 U	6 U	--	--	--	--	--	--
1993	--	--	--	--	--	--	0.003 U	0.0271	6 U	--	--	--	--	--	--
1994	--	--	--	--	--	--	0.059 U	0.06 U	3 U	--	--	--	--	--	--
1995	--	--	--	--	--	--	0.003 U	0.004	3 U	--	--	--	--	--	--
1996	--	--	--	--	--	--	9.9 U	10 U	50 U	--	--	--	--	--	--
1997	--	--	--	--	--	--	9.9 U	10 U	50 U	--	--	--	--	--	--
1998	--	--	--	--	--	--	0.099 U	0.1 U	5 U	--	--	--	--	--	--
1999	--	--	--	--	--	--	0.02 U	0.02 U	3 U	--	--	--	--	--	--
2000	--	--	--	--	--	--	0.02 U	0.02 U	3 U	--	--	--	--	--	--
2001	--	--	--	--	--	--	0.019 U	0.0189 U	0.5 U	--	--	--	--	--	--
2002	--	--	--	--	--	--	0.02 U	0.02 U	3 U	--	--	--	--	--	--
2003	--	--	--	--	--	--	0.02 U	0.02 U	0.5 U	--	--	--	--	--	--
2004	--	--	--	--	--	--	0.02 U	0.02 U	0.98 U	--	--	--	--	--	--
2005	--	--	--	--	--	--	0.021 U	0.021 U	0.5 U	--	--	--	--	--	--
2006	--	--	--	0.004 U	0.0071 U	0.13 U	0.004 U	0.0065 U	0.13 U	0.004 U	0.011 U	0.13 U	--	--	--
2007	--	--	--	0.004 U	0.0094 J	0.13 U	0.0041 U	0.0066 U	0.13 U	0.0034 U	0.0069 U	0.08 U	--	--	--
2008	0.75 U	0.37 U	2.5 U	0.0034 U	0.032 U	0.080 U	0.0036 a	0.015 U	0.080 U	0.0045 a	0.031 U	0.080 U	0.75 U	99	3.4 J

-- No sample collected or analyzed.

a Estimated value, calculated using some or all values that are estimates.

J Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

U Value is non-detect at the method reporting limit.

Shaded cell indicates concentration above response action level (DWC).

BaP Eq - Benzo(a)pyrene equivalency calculated at ND = 1/2 DL.

Naph. - Naphthalene concentration

PCP - Pentachlorophenol concentration

**Table 20**  
**Water Quality Data Over Time**  
**OU3 - City Dump Pit Site**  
**City Dump Pit Site**  
**(concentrations in ug/L)**

Lower Aquifer																		
Year	MW2301			MW2325			MW2326			MW2329			MW2333			MW2335		
	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP	BaP Eq	Naph.	PCP
DWC	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1
1987	0.0011 U	0.012	6 U	0.0011 U	0.011	6 U	0.0011 U	0.013	6 U	—	—	—	0.0011 U	0.011	6 U	0.0011 U	0.0041	6 U
1988	0.0023 U	0.0098	6 U	0.0023 U	0.007	6 U	0.0023 U	0.0071	6 U	—	—	—	0.0011 U	0.0028	6 U	0.0023 U	0.0058	6 U
1989	0.0011 U	0.04	6 U	0.0011 U	0.021	6 U	0.0011 U	0.017	6 U	—	—	—	0.5 U	0.0067	6 U	0.0011 U	0.011	6 U
1990	0.0011 U	0.0082	6 U	0.011 U	0.0099	6 U	9.9 U	10 U	10 U	—	—	—	9.9 U	10 U	10 U	0.0011 U	0.0035	6 U
1991	—	—	—	0.0033 U	0.0094	6 U	9.9 U	10 U	10 U	—	—	—	9.9 U	10 U	10 U	0.003 U	0.0082	6 U
1992	0.003 U	0.0062	6 U	0.003 U	0.009	6 U	9.9 U	10	10 U	—	—	—	9.9 U	10 U	10 U	0.003 U	0.0089	6 U
1993	0.003 U	0.0135	6 U	0.0034	0.01	6 U	0.0089 U	0.02	6 U	—	—	—	0.003 U	0.0123	6 U	0.0031	0.0141	6 U
1994	9.9 U	10 U	5 U	0.0059 U	0.292	3 U	0.059 U	0.06 U	3 U	0.0059 U	0.006 U	3 U	0.15 U	0.15 U	3 U	0.03 U	0.03 U	3 U
1995	0.003 U	0.01	3 U	0.003 U	0.004	3 U	0.003 U	0.014	3 U	0.003 U	0.004	3 U	0.003 U	0.004	3 U	0.003 U	0.005	3 U
1996	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.9 U	10 U	50 U
1997	9.9 U	10 U	50 U	9.9 U	10 U	50 U	9.9 U	10 U	50 U	9.9 U	10 U	50 U	9.9 U	10 U	50 U	9.9 U	10 U	50 U
1998	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.099 U	0.1 U	5 U
1999	0.02 U	0.03	3 U	0.02 U	0.02 U	3 U	0.02 U	0.07	3 U	0.02 U	0.02 U	3 U	0.02 U	0.02 U	3 U	0.02 U	0.04	3 U
2000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02 U	0.02 U	3 U
2001	0.023 U	0.058	0.5 U	0.019 U	0.019 U	0.5 U	0.022 U	0.068	0.5 U	0.02 U	0.02 U	0.5 U	0.02 U	0.019 U	0.5 U	0.022 U	0.022 U	0.5 U
2002	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02 U	0.02 U	2.9 U
2003	0.02 U	0.13	0.5 U	0.02 U	0.02 U	0.5 U	0.02 U	0.067	0.5 U	0.02 U	0.02 U	0.5 U	0.02 U	0.02 U	0.5 U	0.2 U	0.06	0.5 U
2004	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02 U	0.058	0.96 U
2005	0.02 U	0.12	0.5 U	0.021 U	0.021 U	0.5 U	0.021 U	0.25	0.5 U	0.021 U	0.021 U	0.5 U	0.022 U	0.022 U	0.5 U	0.022 U	0.022 U	0.5 U
2006	0.013	0.0065 U	0.2 J	0.004 U	0.015 U	0.13 U	0.004 U	0.011 U	0.13 U	0.004 U	0.004 U	0.13 U	0.004 U	0.0065 U	0.13 U	0.004 U	0.044 U	0.13 U
2007	0.004 U	0.0099 J	0.13 U	0.004 U	0.0077 U	0.13 U	0.004 U	0.0065 U	0.13 U	0.0042 U	0.014 U	0.13 U	0.004 U	0.0065 U	0.13 U	0.004 U	0.02 J	0.13 U
2008	0.0034 U	0.035	0.080 U	0.0034 U	0.020	0.080 U	0.0034 U	0.022	0.080 U	0.0034 U	0.015 J	0.080 U	0.0034 U	0.017 U	0.080 U	0.0034 U	0.023 U	0.080 U

--- No sample collected or analyzed.

a Estimated value, calculated using some or all values that are estimates.

J Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

U Value is non-detect at the method reporting limit.

Shaded cell indicates concentration above response action level (DWC).

BaP Eq - Benzo(a)pyrene equivalency calculated at ND = 1/2 DL.

Naph. - Naphthalene concentration

PCP - Pentachlorophenol concentration

**Table 20**  
**Water Quality Data Over Time**  
**OU3 - City Dump Pit Site**  
**City Dump Pit Site**  
**(concentrations in ug/L)**

Lower Aquifer			
Year	MW2336		
	BaP Eq	Naph.	PCP
DWC	0.02	300	1
1987			--
1988			--
1989			--
1990			--
1991			--
1992			--
1993			--
1994			--
1995			--
1996			--
1997			--
1998			--
1999			--
2000			--
2001			--
2002			--
2003			--
2004			--
2005			--
2006	0.004 U	0.026 U	0.14 J
2007	0.0042 a	0.17	0.13 U
2008	0.0035 U	0.37 U	0.080 U

-- No sample collected or analyzed.

a Estimated value, calculated using some or all values that are estimates.

J Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

U Value is non-detect at the method reporting limit.

Shaded cell indicates concentration above response action level (DWC).

BaP Eq - Benzo(a)pyrene equivalency calculated at ND = 1/2 DL.

Naph. - Naphthalene concentration

PCP - Pentachlorophenol concentration

**Table 21**  
**Groundwater Quality Data - Additional Parameters and Intervention Limits**  
**OU3 - City Dump Area**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L, unless noted otherwise)**

**Table 21**  
**Groundwater Quality Data - Additional Parameters and Intervention Limits**  
**OU3 - City Dump Area**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L, unless noted otherwise)**

Location	Intervention Limits	W2128 5/28/2008	W2128 5/28/2008	W2128 8/22/2008	W2228 5/28/2008	W2228 5/28/2008	W2233 3/27/2008	W2233 5/20/2008	W2233 8/22/2008	W2233 11/19/2008	W2236 3/28/2008	W2236 5/22/2008	W2236 8/23/2008
Dup	Legend	CAS	CAS	Legend	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS
<b>Exceedance Key</b>	<b>Bold</b>												
<u>Dioxins, pg/L</u>													
<b>2,3,7,8-TCDD</b>	0.0038	--	<0.146	<0.320	--	<0.167	<0.255	--	<0.261	<0.226	<0.254	--	<0.345
<b>1,2,3,7,8-Dioxin penta</b>	0.0084	--	<0.179	<0.390	--	<0.151	<0.183	--	<0.392	<0.336	<0.172	--	<0.367
<b>1,2,3,4,7,8-Dioxin, hexa</b>	0.1267	--	<0.127	<0.898	--	<0.156	<0.125	--	<0.664	<0.572	<0.175	--	<0.349
<b>1,2,3,6,7,8-Dioxin, hexa</b>	0.38	--	<0.123	<0.734	--	<0.151	<0.123	--	<0.544	<0.468	<0.173	--	<0.285
<b>1,2,3,7,8,9-Dioxin, hexa</b>	0.38	--	<0.133	<0.803	--	<0.163	<0.125	--	<0.594	<0.511	<0.175	--	<0.312
<b>1,2,3,4,6,7,8-Dioxin, hepta</b>	7.6	--	<1.79	<1.69	--	<1.10	1.06 j EMPC	--	<0.834	<0.411	<0.180	--	<0.382
<b>Dioxin octa</b>	380	--	18.0	<15.4	--	<7.45	<14.3	--	<4.00	<5.04	<3.70	--	<3.92
<b>2,3,7,8-TCDF</b>	0.0475	--	<0.181	<0.237	--	<0.163	<0.231	--	<0.190	<0.197	<0.150	--	<0.306
<b>1,2,3,7,8-Dibenzofuran, penta</b>	0.38	--	<0.141	<0.225	--	<0.156	<0.191	--	<0.281	<0.145	<0.127	--	<0.247
<b>2,3,4,7,8-Dibenzofuran, penta</b>	0.00475	--	<0.136	<0.219	--	<0.151	<0.188	--	<0.274	<0.141	<0.125	--	<0.241
<b>1,2,3,4,7,8-Dibenzofuran, hexa</b>	0.475	--	<0.148	<0.257	--	<0.157	<0.101	--	<0.260	<0.115	<0.122	--	<0.164
<b>1,2,3,6,7,8-Dibenzofuran, hexa</b>	0.19	--	<0.151	<0.240	--	<0.161	<0.106	--	<0.242	<0.107	<0.128	--	<0.153
<b>1,2,3,7,8,9-Dibenzofuran, hexa</b>	0.0633	--	<0.200	<0.294	--	<0.213	<0.131	--	<0.298	<0.133	<0.158	--	<0.189
<b>2,3,4,6,7,8-Dibenzofuran, hexa</b>	0.0543	--	<0.167	<0.271	--	<0.178	<0.112	--	<0.275	<0.122	<0.136	--	<0.173
<b>1,2,3,4,6,7,8-Dibenzofuran, hepta</b>	38	--	<0.187	<0.414	--	<0.173	<0.170	--	<0.264	<0.171	<0.125	--	<0.222
<b>1,2,3,4,7,8,9-Dibenzofuran, hepta</b>	0.95	--	<0.249	<0.547	--	<0.230	<0.223	--	<0.349	<0.227	<0.164	--	<0.293
<b>Dibenzofuran octa</b>	190	--	1.70 j	<2.17	--	0.750 j	<0.416	--	<0.438	<0.409	<0.304	--	<0.642

**Table 21**  
**Groundwater Quality Data - Additional Parameters and Intervention Limits**  
**OU3 - City Dump Area**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L, unless noted otherwise)**

Location	Intervention	W2236	W2236	W2238	W2238	W2238	W2238
Date	Limits	11/20/2008	11/20/2008	5/28/2008	5/28/2008	5/28/2008	5/28/2008
Lab		CAS	CAS	Legend	Legend	CAS	CAS
Dup		DUP	DUP		DUP		DUP
<b>Exceedance Key</b>	<b>Bold</b>						
	<b><u>TPHs</u></b>						
<b>Diesel Range Organics</b>	200	--	--	--	--	<b>330</b>	--
<b>Diesel Range Organics-Silica gel cleanup</b>	200	<15	<18	--	--	--	--
	<b><u>VOCs</u></b>						
Benzene	114	<0.045	<0.045	--	--	<0.045	--
Ethyl benzene	253	<0.042	<0.042	--	--	0.12 j	--
Toluene	68	<0.048	<0.048	--	--	0.34 j	--
Xylene m & p	166	<0.078	<0.078	--	--	0.26 j	--
Xylene o-	166	<0.037	<0.037	--	--	0.24 j	--
	<b><u>SVOCs</u></b>						
Pentachlorophenol	5.5	<0.80	<0.80	--	--	3.4 j	4.1 j
Benzo(a)pyrene	0.02	<0.0043	<0.0043	--	--	<0.66	<0.66
Anthracene	0.035	<0.0036	<0.0036	--	--	0.63 j	<0.62
1,6-Dinitropyrene	--	--	--	<0.0052	<0.0052	--	--
1,8-Dinitropyrene	--	--	--	<0.0041	<0.0041	--	--
1-Nitropyrene	--	--	--	<0.0010	<0.0010	--	--
2-Nitrofluorene	--	--	--	<0.00087	<0.00087	--	--
3-Methylcholanthrene	--	--	--	<0.00088	<0.00088	--	--
5-Methylchrysene	--	--	--	<0.00086	<0.00086	--	--
5-Nitroacenapthene	--	--	--	<0.0017	<0.0017	--	--
6-Nitrochrysene	--	--	--	<0.0018	<0.0018	--	--
7,12-Dimethylbenz(a)anthracene	--	--	--	<0.0019	<0.0019	--	--
7h-Dibenzo(c,g)carbazole	--	--	--	<0.00080	<0.00080	--	--
Benzo(j)fluoranthene	--	--	--	<0.01	<0.01	--	--
Dibenz(a,h)acridine	--	--	--	<0.0027	<0.0027	--	--
Dibenz(a,j)acridine	--	--	--	<0.0038	<0.0038	--	--
Dibenzo(a,e)pyrene	--	--	--	<0.00069	<0.00069	--	--
Dibenzo(a,h)pyrene	--	--	--	<0.0028	<0.0028	--	--
Dibenzo(a,i)pyrene	--	--	--	<0.0014	<0.0014	--	--
Dibenzo(a,l)pyrene	--	--	--	<0.0023	<0.0023	--	--

**Table 21**  
**Groundwater Quality Data - Additional Parameters and Intervention Limits**  
**OU3 - City Dump Area**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L, unless noted otherwise)**

Location	Intervention Limits	W2236 11/20/2008 CAS	W2236 11/20/2008 CAS	W2238 5/28/2008 Legend	W2238 5/28/2008 Legend	W2238 5/28/2008 CAS	W2238 5/28/2008 CAS
<b>Exceedance Key</b>	<b>Bold</b>						
<b>Dioxins, pg/L</b>							
<b>2,3,7,8-TCDD</b>	0.0038	<0.0623	<0.0645	--	--	<0.117	--
<b>1,2,3,7,8-Dioxin penta</b>	0.0084	<0.213	<0.0645	--	--	<0.153	--
<b>1,2,3,4,7,8-Dioxin, hexa</b>	0.1267	<0.242	<0.264	--	--	<0.148	--
<b>1,2,3,6,7,8-Dioxin, hexa</b>	0.38	1.22 j	<0.234	--	--	<0.143	--
<b>1,2,3,7,8,9-Dioxin, hexa</b>	0.38	<0.233	<0.254	--	--	<0.155	--
<b>1,2,3,4,6,7,8-Dioxin, hepta</b>	7.6	27.1	<3.13	--	--	<1.26	--
<b>Dioxin octa</b>	380	<233	<21.1	--	--	10.4	--
<b>2,3,7,8-TCDF</b>	0.0475	<0.117	<0.156	--	--	<0.167	--
<b>1,2,3,7,8-Dibenzofuran, penta</b>	0.38	<0.0988	<0.0544	--	--	<0.165	--
<b>2,3,4,7,8-Dibenzofuran, penta</b>	0.00475	<0.0978	<0.0544	--	--	<0.159	--
<b>1,2,3,4,7,8-Dibenzofuran, hexa</b>	0.475	<0.131	<0.122	--	--	<0.133	--
<b>1,2,3,6,7,8-Dibenzofuran, hexa</b>	0.19	<0.127	<0.117	--	--	<0.136	--
<b>1,2,3,7,8,9-Dibenzofuran, hexa</b>	0.0633	<0.165	<0.153	--	--	<0.179	--
<b>2,3,4,6,7,8-Dibenzofuran, hexa</b>	0.0543	<0.141	<0.131	--	--	<0.149	--
<b>1,2,3,4,6,7,8-Dibenzofuran, hepta</b>	38	2.92 j EMPC	<0.148	--	--	<0.117	--
<b>1,2,3,4,7,8,9-Dibenzofuran, hepta</b>	0.95	<0.296	<0.201	--	--	<0.156	--
<b>Dibenzofuran octa</b>	190	13.7 j	1.14	--	--	0.721 EMPC	--

**Table 21**  
**Groundwater Quality Data - Additional Parameters and Intervention Limits**  
**OU3 - City Dump Area**  
**St. Regis Paper Company Site**  
**Footnotes**

DUP      Duplicate sample.  
--      No criteria/not analyzed.  
\*      Estimated value, QA/QC criteria not met.  
j      Reported value is less than the stated laboratory quantitation limit and is  
      considered an estimated value.  
EMPC    Estimated maximum possible concentration.

**Table 22**  
**Groundwater Quality Data - Surficial Aquifer**  
**Extraction Wells**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location Date Lab Dup	Cass Lake DWC	W401 5/29/2008 CAS	W402 5/29/2008 CAS	W403 5/29/2008 CAS	W405 5/29/2008 CAS	W406 5/29/2008 CAS	W406 5/29/2008 CAS	W407 5/29/2008 CAS	W408 5/29/2008 CAS	W408 5/29/2008 DUP	W409 5/28/2008 CAS	W410 5/29/2008 CAS	W411 5/25/2008 CAS	W2401 5/29/2008 CAS	W2402 5/29/2008 CAS	W2403 5/29/2008 CAS
<b>Exceedance Key</b>	<b>Bold</b>															
<b>Benzo(a)anthracene</b>	--	2.1 jh	<0.60 h	<0.60 h	<0.60	<0.60 h	--	<0.0026 h	<0.60	<0.60	<0.0026	0.016 jh	<0.0047	640 h	<0.60 h	<0.60 h
<b>Chrysene</b>	--	1.8 jh	<0.79 h	<0.79 h	<0.79	<0.79 h	--	<0.0034 h	<0.79	<0.79	<0.0034	0.015 jh	<0.0034	590 h	<0.79 h	<0.79 h
<b>Benzo(b)fluoranthene</b>	--	0.86 jh	<0.59 h	<0.59 h	<0.59	<0.59 h	--	<0.0023 h	<0.59	<0.59	<0.0023	0.0061 jh	<0.0023	350 h	<0.59 h	<0.59 h
<b>Benzo(k)fluoranthene</b>	--	<0.83 h	<0.83 h	<0.83 h	<0.83	<0.83 h	--	<0.0025 h	<0.83	<0.83	<0.0025	0.0031 jh	<0.0025	130 h	<0.83 h	<0.83 h
<b>Benzo(a)pyrene</b>	--	<0.66 h	<0.66 h	<0.66 h	<0.66	<0.66 h	--	<0.0043 h	<0.66	<0.66	<0.0043	<0.0043 h	<0.0043	210 h	<0.66 h	<0.66 h
<b>Indeno(1,2,3-cd)pyrene</b>	--	<0.69 h	<0.69 h	<0.69 h	<0.69	<0.69 h	--	<0.0026 h	<0.69	<0.69	<0.0026	0.0060 jh	<0.0026	65 h	<0.69 h	<0.69 h
<b>Dibenz(a,h)anthracene</b>	--	<0.76 h	<0.76 h	<0.76 h	<0.76	<0.76 h	--	<0.0025 h	<0.76	<0.76	<0.0025	0.0038 jh	<0.0025	20 jh	<0.76 h	<0.76 h
<b>BaP equivalent, non-detects at half of the detection limit.<sup>1</sup></b>	0.2	<b>0.93 a</b>	<0.68 a	<0.68 a	<0.68	<0.68 a	--	<0.0034 a	<0.68	<0.68	0.0034	0.0075 a	0.0035	<b>350 a</b>	<0.68 a	<0.68 a
<b>BaP equivalent, non-detects at zero for the detection limit.<sup>2</sup></b>	0.2	<b>0.31 a</b>	ND a	ND a	ND	ND a	--	ND a	ND	ND	0.0054 a	ND	<b>350 a</b>	ND a	ND a	
<b>2-Methylnaphthalene</b>	--	<0.24 h	<0.24 h	<0.24 h	270	<0.24 h	--	<0.0023 h	0.33 j	1.8 j	27	0.065 h	<0.0034	5400 h	<0.24 h	95 h
<b>Naphthalene</b>	300	<0.37 h	<0.37 h	<0.37 h	<b>2400</b>	<0.37 h	--	<0.0058 h	1.6 j	7.8 j	160	0.66 h	<0.020	<b>13000 h</b>	<0.37 h	<b>1300 h</b>
<b>Acenaphthylene</b>	--	0.87 jh	0.44 jh	<0.24 h	3.5 j	<0.24 h	--	<0.0034 h	<0.24	<0.24	0.29	0.0073 jh	<0.0039	71 h	<0.24 h	3.5 jh
<b>Acenaphthene</b>	400	27 h	22 h	<0.29 h	110	0.47 jh	--	<0.0044 h	0.97 j	5.6 j	11	0.067 h	<0.0044	<b>5200 h</b>	<0.29 h	99 h
<b>Fluorene</b>	300	17 h	14 h	<0.33 h	58	0.40 jh	--	<0.0038 h	<0.33	1.3 j	5.2	0.26 h	<0.0038	<b>3900 h</b>	<0.33 h	45 h
<b>Phenanthrene</b>	--	7.7 jh	0.61 jh	<0.49 h	18	<0.49 h	--	<0.0050 h	<0.49	<0.49	2.1	0.45 h	<0.0050	9200 h	<0.49 h	24 h
<b>Anthracene</b>	2000	8.7 jh	1.4 jh	<0.62 h	4.0 j	<0.62 h	--	0.011 jh	<0.62	<0.62	0.62	0.13 h	0.0072 j	1200 h	<0.62 h	6.9 jh
<b>Fluoranthene</b>	300	19 h	1.2 jh	<0.66 h	<0.66	<0.66 h	--	<0.0044 h	<0.66	<0.66	<0.0044	0.18 h	0.0049 j	<b>4100 h</b>	<0.66 h	1.4 jh
<b>Pyrene</b>	200	9.6 jh	<0.74 h	<0.74 h	<0.74	<0.74 h	--	<0.0035 h	<0.74	<0.74	0.025	0.12 h	0.0075 j	<b>2700 h</b>	<0.74 h	<0.74 h
<b>Benzo(g,h,i)perylene</b>	--	<0.82 h	<0.82 h	<0.82 h	<0.82	<0.82 h	--	<0.0029 h	<0.82	<0.82	<0.0029	<0.0029 h	<0.0029	52 h	<0.82 h	<0.82 h
<b>Pentachlorophenol</b>	1	<b>1800 h</b>	<b>1300 h</b>	<b>460 jh</b>	<b>11000</b>	<2.5 h	<0.080 h	<0.080 h	84 *	620 *	2000	<b>110 h</b>	<b>15</b>	<b>4500 jh</b>	<b>110 h</b>	<b>2100 h</b>

**Table 22**  
**Groundwater Quality Data - Surficial Aquifer**  
**Extraction Wells**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

DWC - Drinking Water Criteria (comprised of EPA MCLs and MN HRLs).

DUP Duplicate sample.

-- No criteria/not analyzed.

\* Estimated value, QA/QC criteria not met.

ND Not detected.

a Estimated value, calculated using some or all values that are estimates.

h EPA recommended sample preservation, extraction or analysis holding time was exceeded.

j Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

1 Total BaP equivalence (2002) calculated using half of the detection limit on the non detected compounds.

2 Total BaP equivalence (2002) calculated using 0 for the detection limit on the non detected compounds.

CAS No.	Site Conc. (ug/L) dry weight	Relative Potency Factor	BaP Equivalent (ug/L)
Benzo(a)anthracene	56553	0.000	0.1
Benzo(b)fluoranthene	205992	0.000	0.1
Benzo(k)fluoranthene	207089	0.000	0.1
Benzo(a)pyrene	50328	0.000	1
Chrysene	218019	0.000	0.01
Dibenz(a,h)anthracene	53703	0.000	0.56
Indeno(1,2,3-cd)pyrene	193395	0.000	0.1

Total BaP equivalence = 0.000  
 compare this value  
 to the BaP criteria

**Table 23**  
**Water Quality Over Time**  
**Extraction Wells**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Year	OU1 - Extraction Wells											OU3 - Extraction Wells		
	W401 PCP	W402 PCP	W403 PCP	W404 PCP	W405 PCP	W406 PCP	W407 PCP	W408 PCP	W409 PCP	W410 PCP	W411 PCP	W2401 PCP	W2402 PCP	W2403 PCP
1987	2,100	1,600	18,000	5,600	9,400	38	5 U	9,400	15,000	160	690	—	—	—
1988	2,000	1,300	9,300	6,300	4,500	12	5 U	5,000	18,000	280	—	16,000	17,000	6,900
1989	56	—	1,500	9,000	7,000	5 U	—	5,600	8,900	12,000	—	—	—	4,500
1990	2,500	1,600	790	—	5,500	—	—	6,200	8,700	80	—	—	1,100	3,000
1991	1,600	1,600	1,200	—	1,500	10 U	—	5,300	6,600	10 U	—	—	720	3,000
1992	1,500	1,100	560	—	840	—	—	3,800	6,200	5 U	—	—	580	3,400
1993	970	810	300	—	6,000	5 U	5 U	4,400	4,800	5 U	—	4,200	450	2,800
1994	2,000	2,200	320	—	6,500	5 U	5 U	3,100	3,700	7	—	3,800	280	1,900
1995	890	1,200	190	—	5,300	5 U	5 U	1,300	2,100	14	—	1,800	220	1,600
1996	—	—	—	—	—	—	—	2,000	—	—	—	—	—	—
1997	1,000	950	560	—	5,300	58	50 U	2,000	5,000	50 U	—	5,700	1,000	2,200
1998	—	—	—	—	—	—	—	1,200	—	—	—	—	—	—
1999	1,200	1,300	640	—	7,000	50 U	50 U	1,800	2,900	50	350	4,400	1,400	3,500
2000	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2001	1,700	2,100	530	—	7,400	24 U	24 U	1,200	3,600	47	14	3,200	340	3,000
2002	—	—	—	—	—	—	—	440	—	—	—	—	—	—
2003	1,700	250	400	—	7,500	0.5 U	0.5 U	700	1,700	3	12	3,100	0.5 U	1,800
2004	—	—	—	—	—	—	—	450	—	—	—	—	—	—
2005	2,200	950	820	—	9,900	0.5 U	0.5 U	820	1,900	20 U	17	2,900	220	2,100
2006	1,300	88	450	—	7,700	0.13 U	0.13 U	660	2,100	36	31	4,200	370	1,700
2007	1,500	960	450	—	7,200	0.13 U	0.13 U	580	1,800	30	11	4,900	250	2,300
2008	1800 H	1300 H	460 JH	—	11000	2.5 UH	0.080 UH	640 <sup>1</sup>	2,000	110 H	15	4500 JH	110 H	2100 H

PCP - Pentachlorophenol concentration

— No sample collected or analyzed.

U Value is non-detect at the method reporting limit.

\* Estimated value, QA/QC criteria not met.

H EPA recommended sample preservation, extraction or analysis holding time was exceeded.

J Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

<sup>1</sup> Concentration from duplicate sample selected.

**Table 24**  
**Groundwater Quality Data - Additional Parameters**  
**Extraction Wells**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location	W409
Date	5/28/2008
Lab	Legend
1,6-Dinitropyrene	<0.0056
1,8-Dinitropyrene	<0.0044
1-Nitropyrene	<0.0011
2-Nitrofluorene	<0.00094
3-Methylcholanthrene	<0.00095
5-Methylchrysene	<0.00093
5-Nitroacenaphthene	<0.0018
6-Nitrochrysene	<0.0019
7,12-Dimethylbenz(a)anthracene	<0.002
7h-Dibenzo(c,g)carbazole	<0.00086
Benzo(j)fluoranthene	<0.011
Dibenz(a,h)acridine	<0.0029
Dibenz(a,j)acridine	<0.0041
Dibenz(a,e)pyrene	<0.00074
Dibenz(a,h)pyrene	<0.003
Dibenz(a,i)pyrene	<0.0015
Dibenz(a,l)pyrene	<0.0025

**Table 25**  
**Water Quality Data - Pentachlorophenol**  
**Groundwater Treatment System**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

	Influent	Primary	Secondary	Effluent	Effluent Limitation
		ADSC	ADSA	ADSB	
<b>01/09/2008</b>	1700	1500	150	<0.080	5.5
<b>02/06/2008</b>	1600	1300	210	<0.080	5.5
		ADSA	ADSB	ADSC	
<b>03/06/2008</b>	1700	750	<0.080	1.6	5.5
<b>04/04/2008</b>	1800	660	0.80	0.52 p	5.5
<b>05/06/2008</b>	2000	840	2.9	<0.34	5.5
<b>06/09/2008</b>	2400	1500	110	1.2 *	5.5
<b>07/07/2008</b>	1800	1500	170	0.59 p	5.5
		ADSB	ADSC	ADSA	
<b>08/05/2008</b>	1900	750	1.5	<0.080	5.5
<b>09/08/2008</b>	2100	1100	26 p	<0.080	5.5
<b>10/06/2008</b>	2300	1400	110	<0.080	5.5
<b>11/04/2008</b>	1900	1500	420	<0.080	5.5
		ADSC	ADSA	ADSB	
<b>12/08/2008</b>	1900	950	<0.080	<0.080	5.5

\* Estimated value, QA/QC criteria not met.

p Relative percent difference is >40% (25% CLP pesticides) between primary and confirmation GC columns.

**Table 26**  
**Water Quality Data - Effluent**  
**Groundwater Treatment System**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L, unless noted otherwise)**

Location Date Lab Dup	Effluent Limitation	ADSB 1/9/2008 CAS	ADSB 2/6/2008 CAS	ADSC 3/6/2008 CAS	ADSC 4/4/2008 CAS	ADSC 5/6/2008 CAS	ADSC 6/6/2008 DUP	ADSC 6/9/2008 CAS	ADSC 6/9/2008 DUP	ADSC 7/7/2008 CAS	ADSC 7/7/2008 DUP	ADSC 8/5/2008 CAS	ADSC 8/5/2008 DUP
<b>Exceedance Key</b>	<b>Bold</b>												
	<b>SVOCs</b>												
2-Methylnaphthalene	--	<0.0023	<0.0023	<0.0023	0.024	<0.024	<0.024	0.0025 j	--	<0.0023	--	<0.0023	--
Acenaphthene	12	<0.0044	<0.0044	0.034	0.072	0.054	0.051	<0.0044	--	<0.0044	--	0.0075 j	--
Acenaphthylene	--	<0.0034	<0.0034	0.020	<0.0034	<0.0034	<0.0034	<0.0034	--	<0.0034	--	<0.0034	--
Anthracene	0.029	<0.0036	<0.0036	0.0055 j	0.014 j	0.014 j	0.0091 j	0.013 j	--	<0.0036	--	<0.0036	--
Benzo(a)anthracene	--	0.0041 j	0.0040 j	0.022	0.022	0.011 j	0.010 j	0.044	--	0.018 j	--	0.0045 j	--
Benzo(a)pyrene	0.02	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	0.050	--	0.012 j	--	<0.0043	--
Benzo(b)fluoranthene	--	<0.0023	<0.0023	0.013 j	<0.0023	0.0042 j	0.0032 j	0.088	--	0.020	--	0.0025 j	--
Benzo(g,h,i)perylene	--	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	0.014 j	--	0.0035 j	--	<0.0029	--
Benzo(k)fluoranthene	--	<0.0025	<0.0025	0.0049 j	<0.0025	<0.0025	<0.0025	0.041	--	0.0077 j	--	<0.0025	--
Chrysene	--	<0.0034	<0.0034	0.0066 j	0.011 j	0.0092 j	0.0075 j	0.024	--	0.0071 j	--	<0.0034	--
Dibenz(a,h)anthracene	--	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0062 j	--	<0.0025	--	<0.0025	--
Fluoranthene	20	0.0079 j	0.0089 j	0.17	0.097	0.064	0.058	0.055	--	0.032	--	0.014 j	--
Fluorene	--	<0.0038	<0.0038	0.0073 j	0.041	0.034	0.029	0.0079 j	--	<0.0038	--	0.0045 j	--
Indeno(1,2,3-cd)pyrene	--	<0.0026	<0.0026	<0.0026	<0.0026	0.0028 j	<0.0026	0.020	--	0.0044 j	--	<0.0026	--
Naphthalene	81	<0.0030	<0.010	<0.0030	0.12	<0.16	<0.15	0.0063 j	--	<0.0030	--	<0.0032	--
Phenanthrene	2.1	<0.0050	<0.0050	<0.0050	0.085	0.061	0.058	0.0072 j	--	<0.0050	--	0.0083 j	--
Pyrene	--	0.0054 j	0.0060 j	0.28	0.075	0.041	0.036	0.15	--	0.048	--	0.012 j	--
Pentachlorophenol	5.5	<0.080	<0.080	1.6	0.52 p	<0.34	--	1.2 *	--	0.59 p	--	<0.080	<0.080
Arsenic	53	0.74	0.87	4.03	1.52	0.96	--	1.32	1.14	0.53	--	1.54	--
Chromium	11 CR	<0.16	<0.03	<0.13	0.92	0.20	--	<0.32	<0.28	<0.15 *	--	0.08 j	--
Copper	9.8 HD	0.71	0.65	0.52	0.63	0.64	--	2.06	12.04	0.86	--	0.65	--
<b>TPHs</b>													
Diesel Range Organics	200	<12	<33	22 j	23 j	<28	--	37 j	--	29 j	--	<27	--
Diesel Range Organics-Silica gel cleanup	200	--	--	--	--	--	--	--	--	--	--	--	--
<b>VOCs</b>													
Benzene	114	<0.14	<0.14	<0.14	<0.14	<0.045	--	<0.045	--	<0.045	<0.045	<0.045	--
Ethyl benzene	68	<0.13	<0.13	<0.13	<0.13	<0.042	--	<0.042	--	<0.042	<0.042	<0.042	--
Toluene	253	<0.11	<0.11	<0.11	<0.11	<0.048	--	<0.11	--	0.090 j	0.15 j	0.090 j	--
Xylene m & p	166	<0.22	<0.22	<0.22	<0.22	<0.078	--	<0.078	--	<0.078	<0.078	<0.078	--
Xylene o-	166	<0.11	<0.11	<0.11	<0.11	<0.037	--	<0.037	--	<0.037	<0.037	<0.037	--
<b>Dioxins, pp/L</b>													
2,3,7,8-TCDD	0.0038	--	<0.581	--	--	<0.249	--	--	--	--	--	<0.382	--
1,2,3,7,8-Dioxin penta	0.0084	--	<0.402	--	--	<0.287	--	--	--	--	--	<0.324	--
1,2,3,4,7,8-Dioxin, hexa	0.1267	--	<0.313	--	--	<0.160	--	--	--	--	--	<0.337	--
1,2,3,7,8-Dioxin, hexa	0.38	--	<0.303	--	--	<0.158	--	--	--	--	--	<0.276	--
1,2,3,7,8,9-Dioxin, hexa	0.38	--	<0.328	--	--	<0.160	--	--	--	--	--	<0.301	--
1,2,3,4,6,7,8-Dioxin, hepta	7.6	--	<0.366	--	--	<2.33	--	--	--	--	--	<12.6	--
Dioxin octa	380	--	<16.3	--	--	<16.6	--	--	--	--	--	<96.1	--
2,3,7,8-TCDF	0.0475	--	<0.858	--	--	<0.295	--	--	--	--	--	<0.382	--
1,2,3,7,8-Dibenzofuran, penta	0.38	--	<0.313	--	--	<0.185	--	--	--	--	--	<0.255	--
2,3,4,7,8-Dibenzofuran, penta	0.00475	--	<0.302	--	--	<0.181	--	--	--	--	--	<0.250	--
1,2,3,4,7,8-Dibenzofuran, hexa	0.475	--	<0.285	--	--	<0.165	--	--	--	--	--	<0.240	--
1,2,3,6,7,8-Dibenzofuran, hexa	0.19	--	<0.291	--	--	<0.172	--	--	--	--	--	<0.223	--
1,2,3,7,8,9-Dibenzofuran, hexa	0.0543	--	<0.386	--	--	<0.212	--	--	--	--	--	<0.276	--
2,3,4,6,7,8-Dibenzofuran, hexa	0.0633	--	<0.322	--	--	<0.182	--	--	--	--	--	<0.253	--
1,2,3,4,6,7,8-Dibenzofuran, hepta	38	--	<0.558	--	--	0.786 j	--	--	--	--	--	<2.93	--
1,2,3,4,7,8,9-Dibenzofuran, hepta	0.95	--	<0.744	--	--	<0.394	--	--	--	--	--	<0.418	--
Dibenzofuran octa	190	--	<1.26	--	--	<1.50	--	--	--	--	--	<13.7	--

**Table 26**  
**Water Quality Data - Effluent**  
**Groundwater Treatment System**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L, unless noted otherwise)**

Location Date Lab Dup	Effluent Limitation	ADSA 9/8/2008 CAS	ADSA 9/8/2008 CAS	ADSA 10/6/2008 DUP	ADSA 11/4/2008 CAS	ADSA 11/4/2008 CAS	ADSB 12/8/2008 CAS
<b>Exceedance Key</b>	<b>Bold</b>						
<b>SVOCs</b>							
2-Methylnaphthalene	--	0.0025 j	--	<0.0023	<0.0023	--	0.0033 j
Acenaphthene	12	0.0071 j	--	<0.0044	<0.0044	--	0.0095 j
Acenaphthylene	--	<0.0034	--	<0.0034	<0.0034	--	<0.0034
Anthracene	0.029	<0.0036	--	<0.0036	<0.0036	--	<0.0036
Benzo(a)anthracene	--	0.0036 j	--	0.0035 j	0.0082 j	--	<0.0039
Benzo(a)pyrene	0.02	<0.0043	--	<0.0043	0.0080 j	--	<0.0043
Benzo(b)fluoranthene	--	<0.0023	--	<0.0023	0.012 j	--	<0.0023
Benzo(g,h,i)perylene	--	<0.0029	--	<0.0029	<0.017	--	<0.0029
Benzo(k)fluoranthene	--	<0.0025	--	<0.0025	0.0075 j	--	<0.0025
Chrysene	--	<0.0034	--	0.0038 j	0.0065 j	--	<0.0034
Dibenz(a,h)anthracene	--	<0.0025	--	<0.0025	<0.011	--	<0.0025
Fluoranthene	20	0.0096 j	--	0.015 j	0.011 j	--	0.015 j
Fluorene	--	0.0071 j	--	0.0039 j	<0.0038	--	0.0093 j
Indeno(1,2,3-cd)pyrene	--	<0.0026	--	<0.0026	<0.0084	--	<0.0026
Naphthalene	81	<0.0070	--	<0.0030	<0.0030	--	0.0089 j
Phenanthrene	2.1	0.015 j	--	0.0084 j	<0.0050	--	0.021
Pyrene	--	0.0062 j	--	0.01 j	0.010 j	--	0.0083 j
Pentachlorophenol	5.5	<0.080	--	<0.080	<0.080	--	<0.080
Arsenic	53	1.05	--	1.4 j	1.4 j	--	0.68
Chromium	11 CR	0.32	--	<0.020	<0.020	--	0.196 j
Copper	9.8 HD	1.24	--	0.89	0.92	--	0.41
<b>TPHs</b>							
Diesel Range Organics	200	<36	<22	<15	--	--	--
Diesel Range Organics-Silica gel cleanup	200	--	--	--	<21	--	<21
<b>VOCs</b>							
Benzene	114	<0.045	--	<0.045	<0.045	--	<0.045
Ethyl benzene	68	<0.042	--	<0.042	<0.042	--	<0.042
Toluene	253	0.050 j	--	0.21 j	<0.048	--	<0.048
Xylene m & p	166	<0.078	--	<0.078	<0.078	--	<0.078
Xylene o-	166	<0.037	--	<0.037	<0.037	--	<0.037
<b>Dioxins, pg/L</b>							
2,3,7,8-TCDD	0.0038	--	--	--	<0.281	<0.471	--
1,2,3,7,8-Dioxin penta	0.0084	--	--	--	<0.296	<0.588	--
1,2,3,4,7,8-Dioxin, hexa	0.1267	--	--	--	<0.592	<0.262	--
1,2,3,6,7,8-Dioxin, hexa	0.38	--	--	--	<0.484	<0.213	--
1,2,3,7,8,9-Dioxin, hexa	0.38	--	--	--	<0.529	<0.234	--
1,2,3,4,6,7,8-Dioxin, hepta	7.6	--	--	--	<7.54	<7.50	--
Dioxin octa	380	--	--	--	<69.1	<63.4	--
2,3,7,8-TCDF	0.0475	--	--	--	<0.277	<0.464	--
1,2,3,7,8-Dibenzofuran, penta	0.38	--	--	--	<0.291	<0.346	--
2,3,4,7,8-Dibenzofuran, penta	0.00475	--	--	--	<0.283	<0.338	--
1,2,3,4,7,8-Dibenzofuran, hexa	0.475	--	--	--	<0.412	<0.194	--
1,2,3,6,7,8-Dibenzofuran, hexa	0.19	--	--	--	<0.384	<0.181	--
1,2,3,7,8,9-Dibenzofuran, hexa	0.0543	--	--	--	<0.473	<0.222	--
2,3,4,6,7,8-Dibenzofuran, hexa	0.0633	--	--	--	<0.435	<0.204	--
1,2,3,4,6,7,8-Dibenzofuran, hepta	38	--	--	--	<1.48	<1.47	--
1,2,3,4,7,8,9-Dibenzofuran, hepta	0.95	--	--	--	<0.521	<0.338	--
Dibenzofuran octa	190	--	--	--	<6.13	<7.22	--

**Table 27**  
**2008 Monthly Volume**  
**Groundwater Treatment System**  
**St. Regis Paper Company and City Dump Sites**

Month	Flow ( $10^6$ gallons)
Jan-08	5.2
Feb-08	4.8
Mar-08	4.9
Apr-08	4.3
May-08	5.0
Jun-08	5.4
Aug-08	5.3
Aug-08	5.6
Sep-08	5.0
Oct-08	5.5
Nov-08	5.1
Dec-08	5.2
Total	61.3

**Table 28**  
**2008 Average Effluent pH**  
**Groundwater Treatment System**  
**St. Regis Paper Company and City Dump Sites**

Month	pH
Jan-08	6.9
Feb-08	6.9
Mar-08	7.0
Apr-08	7.0
May-08	7.0
Jun-08	6.9
Jul-08	6.9
Aug-08	7.0
Sep-08	6.9
Oct-08	6.9
Nov-08	6.9
Dec-08	6.9
Average	6.9

**Table 29**  
**Groundwater Quality Data - Lower Aquifer**  
**Fish Hatchery Wells**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location Date Lab	Cass Lake DWC	FISH1 5/20/2008 CAS	FISH2 5/20/2008 CAS	FISH3 5/20/2008 CAS	FISH4 5/20/2008 CAS
<b>Exceedance Key</b>	<b>Bold</b>				
Benzo(a)anthracene	--	<0.0026	<0.0026	<0.0026	<0.0026
Chrysene	--	<0.0034	<0.0034	<0.0034	<0.0034
Benzo(b)fluoranthene	--	<0.0023	<0.0023	<0.0023	<0.0023
Benzo(k)fluoranthene	--	<0.0025	<0.0025	<0.0025	<0.0025
Benzo(a)pyrene	--	<0.0043	<0.0043	<0.0043	<0.0043
Indeno(1,2,3-cd)pyrene	--	<0.0026	<0.0026	<0.0026	<0.0026
Dibenz(a,h)anthracene	--	<0.0025	<0.0025	<0.0025	<0.0025
BaP equivalent, non-detects at half of the detection limit. <sup>1</sup>	0.2	<0.0034	<0.0034	<0.0034	<0.0034
BaP equivalent, non-detects at zero for the detection limit. <sup>2</sup>	0.2	ND	ND	ND	ND
2-Methylnaphthalene	--	<0.0023	<0.0023	<0.0023	<0.0023
Naphthalene	300	<0.017	<0.0080	<0.0097	<0.017
Acenaphthylene	--	<0.0034	<0.0034	<0.0034	<0.0034
Acenaphthene	400	<0.0044	<0.0044	<0.0044	<0.0044
Fluorene	300	<0.0038	<0.0038	<0.0038	<0.0038
Phenanthrene	--	<0.0050	<0.0050	<0.0050	<0.0050
Anthracene	2000	<0.0036	<0.0036	<0.0036	<0.0036
Fluoranthene	300	<0.0044	<0.0044	<0.0044	<0.0044
Pyrene	200	<0.0035	<0.0035	<0.0035	<0.0035
Benzo(g,h,i)perylene	--	<0.0029	<0.0029	<0.0029	<0.0029
Pentachlorophenol	1	<0.080	<0.080	<0.080	<0.080

**Table 29**  
**Groundwater Quality Data - Lower Aquifer**  
**Fish Hatchery Wells**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

DWC - Drinking Water Criteria (comprised of EPA MCLs and MN HRLs).

-- No criteria.  
 ND Not detected.

1 Total BaP equivalence (2002) calculated using half of the detection limit on the non detected compounds.  
 2 Total BaP equivalence (2002) calculated using 0 for the detection limit on the non detected compounds.

	CAS No.	Site Conc. dry weight (ug/L)	Relative Potency Factor	BaP Equivalent (ug/L)
Benzo(a)anthracene	56553	0.000	0.1	0.000
Benzo(b)fluoranthene	205992	0.000	0.1	0.000
Benzo(k)fluoranthene	207089	0.000	0.1	0.000
Benzo(a)pyrene	50328	0.000	1	0.000
Chrysene	218019	0.000	0.01	0.000
Dibenz(a,h)anthracene	53703	0.000	0.56	0.000
Indeno(1,2,3-cd)pyrene	193395	0.000	0.1	0.000
Total BaP equivalence =				0.000
compare this value to the BaP criteria				

**Table 30**  
**Water Quality Data Over Time**  
**Fish Hatchery Wells**  
**Cass Lake, Minnesota**  
**(concentrations in ug/L)**

Year	Fish 1			Fish 2			Fish 3			Fish 4		
	BaP Eq	Naph.	PCP									
DWC	0.02	300	1	0.02	300	1	0.02	300	1	0.02	300	1
May-92	0.003 U	0.004 U	6 U	0.003 U	0.004 U	6 U	0.003 U	0.004 U	6 U	0.045 U	0.62	6 U
Dec-92	—	—	—	—	—	—	—	—	—	0.003 U	0.09	—
Jun-93	—	—	—	—	—	—	—	—	—	—	—	6 U
Jul-93	—	—	—	—	—	—	—	—	—	0.003 U	0.00958	—
Feb-94	—	—	—	—	—	—	—	—	—	0.089 U	0.666	6 U
Jun-94	—	—	—	—	—	—	—	—	—	0.089 U	1.11	3 U
Dec-94	—	—	—	—	—	—	—	—	—	0.003 U	0.012	3 U
Jun-95	0.003 U	0.003 U	3 U	0.003 U	0.003 U	3 U	0.003 U	0.005	3 U	0.3 U	2.6	3 U
Nov-95	—	—	—	—	—	—	—	—	—	0.0095 U	0.006 U	3 U
Jun-97	—	—	—	—	—	—	—	—	—	9.9 U	3	50 U
May-98	—	—	—	—	—	—	—	—	—	0.1 U	0.2	0.5 U
May-99	—	—	—	—	—	—	—	—	—	0.02 U	0.32	3 U
Apr-00	—	—	—	—	—	—	—	—	—	0.02 U	0.03	0.5 U
Apr-01	—	—	—	—	—	—	—	—	—	0.019 U	0.0019 U	0.5 U
May-02	—	—	—	—	—	—	—	—	—	0.02 U	0.02 U	3 U
May-03	—	—	—	—	—	—	—	—	—	0.02 U	0.02 U	0.5 U
Apr-04	—	—	—	—	—	—	—	—	—	0.019 U	0.019 U	0.95 U
May-05	—	—	—	—	—	—	—	—	—	0.02 U	0.02 U	0.5 U
Sep-06	0.004 U	0.0065 U	0.13 U	0.004 U	0.0065 U	0.13 U	0.004 U	0.065 U	0.13 U	0.004 U	0.0065 U	0.13 U
May-07	0.004 U	0.0065 U	0.13 U	0.004 U	0.0092 U	0.13 U	0.004 U	0.022 U	0.13 U	0.004 U	0.01 U	0.13 U
May-08	0.0034 U	0.017 U	0.080 U	0.0034 U	0.0080 U	0.080 U	0.0034 U	0.0097 U	0.080 U	0.0034 U	0.017 U	0.080 U

— No sample collected or analyzed.

U Value is non-detect at the method reporting limit.

BaP Eq - Benzo(a)pyrene equivalency calculated at ND = 1/2 DL.

Naph. - Naphthalene concentration

PCP - Pentachlorophenol concentration

**Table 31**  
**Groundwater Quality Data - Shallow Surificial Aquifer**  
**MDNR Well #11016**  
**(concentrations in ug/L)**

Location	DNR #11016
Date	5/27/2008
Lab	CAS
Dup	
<b>Exceedance Key</b>	
Benzo(a)anthracene	<0.0026
Chrysene	<0.0034
Benzo(b)fluoranthene	<0.0023
Benzo(k)fluoranthene	<0.0025
Benzo(a)pyrene	<0.0043
Indeno(1,2,3-cd)pyrene	<0.0026
Dibenz(a,h)anthracene	<0.0025
BaP equivalent, non-detects at half of the detection limit. <sup>1</sup>	<0.0034
BaP equivalent, non-detects at zero for the detection limit. <sup>2</sup>	ND
2-Methylnaphthalene	<0.0096
Naphthalene	<0.066
Acenaphthylene	<0.0034
Acenaphthene	<0.0044
Fluorene	<0.0038
Phenanthrene	<0.056
Anthracene	0.070
Fluoranthene	<0.0044
Pyrene	<0.0035
Benzo(g,h,i)perylene	<0.0029
Pentachlorophenol	<0.080

**Table 31**  
**Groundwater Quality Data - Shallow Surficial Aquifer**  
**MDNR Well #11016**  
**(concentrations in ug/L)**

ND      Not detected.

1 Total BaP equivalence (2002) calculated using half of the detection limit on the non detected compounds.

2 Total BaP equivalence (2002) calculated using 0 for the detection limit on the non detected compounds.

	CAS No.	Site Conc. (ug/L) dry weight	Relative Potency Factor	BaP Equivalent (ug/L)
Benzo(a)anthracene	56553	0.000	0.1	0.000
Benzo(b)fluoranthene	205992	0.000	0.1	0.000
Benzo(k)fluoranthene	207089	0.000	0.1	0.000
Benzo(a)pyrene	50328	0.000	1	0.000
Chrysene	218019	0.000	0.01	0.000
Dibenz(a,h)anthracene	53703	0.000	0.56	0.000
Indeno(1,2,3-cd)pyrene	193395	0.000	0.1	0.000

Total BaP equivalence = 0.000

compare this value

to the BaP criteria

**Table 32**  
**Leachate Elevations**  
**OU2- Containment Vault**  
**St. Regis Paper Company and City Dump Pit Sites**

Date	Leachate Collection Manhole [ft MSL]	Leak Detection Manhole [ft MSL]
12/04/92	1312.40	1312.39
05/17/93	1313.32	1313.14
08/02/93	1313.63	1313.32
10/07/93	1313.65	1313.47
04/15/94	1313.82	1313.80
09/13/94	1313.82	1313.80
04/27/95	1314.15	1314.22
07/18/95	1314.15	1314.22
06/13/96	1314.59	1314.66
09/22/97	1314.90	1314.91
05/05/98	1314.82	1314.72
08/31/98	1314.86	1314.80
05/06/99	1315.03	1314.72
09/22/99	1315.15	1315.14
04/27/00	1315.36	1315.39
09/27/00	1315.19	1315.22
05/31/01	1315.73	1315.80
10/03/01	1315.78	1315.85
10/05/01	1315.78	1315.85
10/22/01	1314.19	1313.39
10/29/01	1312.36	1312.20
11/13/01	1312.36	1311.22
05/03/02	1313.78	1313.72
10/02/02	1313.94	1313.91
10/21/02	1313.94	1313.91
12/11/02	1313.86	1312.64
05/23/03	1313.53	1313.60
11/06/03	1313.23	1313.01
05/17/04	1313.32	1313.28
11/05/04	1313.34	1312.89
05/11/05	1313.36	1313.26
10/03/05	1313.53	1313.35
11/02/05	1313.28	1312.60
05/12/06	1313.78	1313.14
11/09/06	1313.46	1313.20
11/21/06	1312.42	1311.42
05/04/07	1313.66	1312.97
08/15/07	1313.76	1313.05
08/16/07	1312.35	1311.41
11/14/07	1313.56	1312.84
05/06/08	1313.40	1313.07
09/09/08	1312.44	1311.68
11/07/08	1313.68	1312.89

**Notes:**

LCM - Bottom elevation - 1312.19 ft MSL

LDM - Bottom elevation - 1311.20 ft MSL

MSL - Mean sea level based on NAVD88.

**Table 33**  
**Benchmark Elevations**  
**OU2 - Containment Vault-Operable Unit**  
**St. Regis Paper Company Site**

[Elevations in Ft. MSL]

Date	BM-1 [ft MSL]	BM-2 [ft MSL]	BM-3 [ft MSL]	BM-4 [ft MSL]	BM-5 [ft MSL]
12/21/88	1341.41	1338.42	1338.89	1341.18	1338.83
04/08/91	1341.44	1338.46	1338.93	1341.21	1338.82
08/09/92	1341.43	1338.44	1338.93	1341.20	1338.83
10/07/93	1341.49	1338.56	1339.05	1341.17	1338.85
06/16/94	1341.69	1338.69	1339.17	1341.46	1338.98
06/09/95	1341.70	1338.74	1339.19	1341.47	1339.09
06/04/96	1341.69	1338.70	1339.18	1341.47	1339.08
06/04/97	1341.69	1338.72	1339.20		1339.09
05/01/98	1341.68	1338.67	1339.18	1341.46	1339.07
05/14/99	1341.68	1338.69	1339.17	1341.46	1339.06
04/06/00	1341.68	1338.68	1339.14	1341.46	1339.08
04/27/01	1341.67	1338.70	1339.17	1341.45	1339.06
05/06/02	1341.70	1338.70	1339.16	1341.45	1339.06
05/12/03	1341.68	1338.70	1339.18	1341.46	1339.07
04/28/04	1341.68	1338.72	1339.19	1341.46	1339.08
05/06/05	1341.69	1338.71	1339.18	1341.47	1339.07
09/08/06	1341.70	1338.72	1339.18	1341.47	1339.08
05/10/07	1341.69	1338.72	1339.18	1341.47	1339.07
05/23/08	1341.69	1338.71	1339.18	1341.46	1339.06

MSL - Mean sea level based on NAVD88.

**Table 34**

**Leachate Removal Summary  
OU2 - Containment Vault  
St. Regis Paper Company Site  
Cass Lake, Minnesota**

Date	Flowmeter (ft <sup>3</sup> )	Volume Removed (gallons)	LCM		LDM	
			Depth [ft]	Elevation [ft MSL]	Depth [ft]	Elevation [ft MSL]
11/09/06			31.69	1313.46	32.02	1313.20
11/21/06		7,086	Meter Quit - Timed (383 minutes @ 118.5 gpm)			
11/21/06			32.73	1312.42	33.80	1311.42
08/15/07		3,496				
09/09/08		9,780	Meter Quit - Timed (163 minutes @ 118.5 gpm)			
09/09/08			32.71	1312.44	33.54	1311.61

**Leachate Removal Summary**  
**2008            9,800 gallons**  
**Prior Years    1,585,900 gallons**  
**Total            1,595,700 gallons**

**Annual Totals**  
**2001            129,535 gallons**  
**2002            27,470 gallons**  
**2003            17,092 gallons**  
**2004            10,487 gallons**  
**2005            10,681 gallons**  
**2006            7,086 gallons**  
**2007            3,496 gallons**  
**2008            9,780<sup>1</sup> gallons**

MSL - Mean sea level based on NAVD88.

<sup>1</sup> Estimated

**Table 35**  
**Annual Sample Program - 2009**  
**Groundwater and Surface Water Monitoring**  
**St. Regis Paper Company and City Dump Pit Sites**

Operable Unit	Screened Interval	Station	Category	PCP		PAHs		BETX		DRO	Dioxins	Water Level (1)
				8270	8151	8270	8270-SIM	8270-SIM (Calif.)	8260	8015M	8290	
OU1-Treating Facility Area	Top of Surficial	W104	P		1		1					2
		W105R	I		1		1					2
		W112	P		1		1					2
		W114	I		1		1					2
		W115	I		1		1					2
		W118	PMC									2
	Bottom of Surficial	W205	P		1		1					2
		W209	P		1		1					2
		W212 <sup>(2)</sup>	I									2
		W213 <sup>(2)</sup>	I									2
		W215	I		1		1	1				2
		W217	P		1		1					2
		W218	P		1		1					2
		W219	P		1		1					2
		W220 <sup>(2)</sup>	I					1				2
		W221	P		1		1					2
	Lower Aquifer	W222										2
		W223										2
		MW3	P		1		1					2
	Pump-out Wells	W302	P		1		1					2
		W306	I		1		1					2
		W401	P	1		1						2
	Observation Wells	W402	P	1		1						2
		W403	P	1		1						2
		W404										2
		W405	P	1		1						2
		W406	P		1		1					2
		W407	P		1		1					2
		W408	I	1		1						2
		W409	P	1			1	1				2
		W410	P	1			1					2
		W411	P		1		1					2
	Special Observation Wells	W509										2
		W510										2
		W511										2
		W512										2
		W513										2
		W514										2
	Channel	SO401	PMC									
		SO402										
		SO403										
		SO405										
		CL-N	I		1							
	North Staff	CL-S	I		1							
		RR Staff										2
		South Staff										2
												2
Off-site	Top of Surficial	DNR #11016			1		1					2

**Table 35**  
**Annual Sample Program - 2009**  
**Groundwater and Surface Water Monitoring**  
**St. Regis Paper Company and City Dump Pit Sites**

Operable Unit	Screened Interval	Station	Category	PCP		PAHs		BETX	DRO	Dioxins	Water Level (1)
				8270	8151	8270	8270-SIM				
OU2 - Containment Vault Area	Upper Aquifer	W124	I		1		1				2
		W125	I		1		1				2
		W126	I		1		1				2
		W127	P		1		1				2
		W128	I		1		1				2
		W129	I		1		1				2
		W130	I		1		1				2
OU3 - City Dump Pit Area	Top of Surficial	W2102	PMC								2
		W2103	PMC								2
		W2104	PMC								2
		W2105	PMC								2
		W2106	PMC	1		1				1	2
		W2127	I		1		1				2
		W2128 <sup>(2)</sup>	P								2
		W2129	I		1		1				2
		W2134	P		1		1				2
		W2135	I		1		1				2
	Bottom of Surficial	W2228	I		1		1				2
		W2233 <sup>(2)</sup>									2
		W2234	I		1		1				2
		W2236 <sup>(2)</sup>									2
	Lower Aquifer	W2237R	I		1		1				2
		W2238	I		1		1				2
		W2239	I		1		1				2
		W2301	P		1		1				2
		W2325	P		1		1				2
		W2326	P		1		1				2
		W2329	P		1		1				2
	Pump-out Wells	W2333	P		1		1				2
		W2335	I		1		1				2
		W2336 <sup>(2)</sup>									2
	Scavenger Wells	W2239	I		1		1				2
		W2401	P	1		1					2
		W2402	P	1		1					2
	Observation Wells	W2403	P	1		1					2
		W2501									2
		W2502									2
	Additional Wells	W2504									2
		W2505									2
		Fish 1			1		1				
		Fish 2			1		1				
		Fish 3			1		1				
		Fish 4	I		1		1				

**Table 35**  
**Annual Sample Program - 2009**  
**Groundwater and Surface Water Monitoring**  
**St. Regis Paper Company and City Dump Pit Sites**

Operable Unit	Screened Interval	Station	Category	PCP		PAHs		BETX		DRO	Dioxins	Water Level (1)
				8270	8151	8270	8270-SIM	8270-SIM (Calif.)	8260	8015M	8290	
<b>Number of Samples</b>				11	49	9	49	4	0	0	1	170
<b>Number of QC Samples</b>												
Duplicates	5%			1	3	1	3	1	0	0	1	9
Field Blanks	5%			1	3	1	3	1	0	0	1	-
MS/MSD	5%			1	3	1	3	1	0	0	1	-
<b>Total Number of Samples</b>				14	58	12	58	7	0	0	4	179

**Table 35**  
**Annual Sample Program - 2009**  
**Groundwater and Surface Water Monitoring**  
**St. Regis Paper Company and City Dump Pit Sites**

Operable Unit	Screened Interval	Station	Category	PCP	PAHs	BETX	DRO	Dioxins	Water Level (1)
				8270	8151	8270	8270-SIM	8270-SIM (Calif.)	

**Notes:**

This table identifies the number of samples at each station over the year.

(1) Water levels will be measured in during the spring and fall sampling event.

(2) See Quarterly Sample Program (Table 36)

**Category**

I - Indicator Monitoring Station (Annual Sampling)

P - Performance Monitoring Station (Biennial Sampling)

PMC - Product Monitoring and Collection Station

**Table 36**  
**Quarterly Sample Program - 2009**  
**Groundwater and Surface Water Monitoring**  
**St. Regis Paper Company and City Dump Pit Sites**

Operable Unit	Screened Interval	Station	Category	PCP		PAHs		BETX	DRO	Dioxins	Water Level			
				8270	8151	8270	8270-SIM (Calif.)	8260	8015M	8290				
OU1- Treating Facility Area	Bottom of Surficial	W212	I		4		4		4	4	4			
		W213	I		4		4		4	4	4			
		W220	I		4		4		4	4	4			
OU3 - City Dump Pit Site	Top of Surficial	W2128	P		4		4		4	4	4			
	Bottom of Surficial	W2233			4		4		4	4	4			
		W2236			4		4		4	4	4			
	Lower Aquifer	W2336			4		4		4	4	4			
<b>Number of Samples</b>				0	28	0	28	0	28	28	28			
<b>Number of QC Samples <sup>(1)</sup></b>														
	Duplicates			0	2	0	2	0	3	3	3			
	Field Blanks			0	2	0	2	0	3	3	3			
	MS/MSD			0	2	0	2	0	3	3	3			
<b>Total Number of Samples</b>				0	34	0	34	0	37	37	37			
<b>Notes:</b>														
This table identifies the number of samples at each station over the year.														
(1) Number of QC samples as follows:														
PCP - 5% PAH - 5% BETX - 10% DRO - 10% Dioxins - 10%														

**Category**

I - Indicator Monitoring Station (Annual Sampling)

P - Performance Monitoring Station (Biennial Sampling)

PMC - Product Monitoring and Collection Station

**Table 37**  
**Monthly Sample Program - 2009**  
**Effluent and GAC Performance Monitoring Program**  
**St. Regis Paper Company and City Dump Pit Sites**

Month	PCP				PAHs 8270-SIM	Metals <sup>(A)</sup> 6020; 7195/6010B	BETX 8620	DRO 8015B	Dioxins/furans 8290
	Influent	Primary	Secondary	Effluent			Effluent	Effluent	Effluent
	8151M								
Month	Influent	Primary	Secondary	Effluent	Effluent	Effluent	Effluent	Effluent	Effluent
January	1	1	1	1	1	1	1	1	
February	1	1	1	1	1	1	1	1	1
March	1	1	1	1	1	1	1	1	
April	1	1	1	1	1	1	1	1	
May	1	1	1	1	1	1	1	1	1
June	1	1	1	1	1	1	1	1	
July	1	1	1	1	1	1	1	1	
August	1	1	1	1	1	1	1	1	1
September	1	1	1	1	1	1	1	1	
October	1	1	1	1	1	1	1	1	
November	1	1	1	1	1	1	1	1	1
December	1	1	1	1	1	1	1	1	
<b>Number of Samples</b>	<b>48</b>		<b>12</b>		<b>12</b>		<b>12</b>		<b>4</b>
<b>Number of QC Samples</b>									
Duplicate	5%	3		1	1	1	1	1	1
Field Blank	5%	3		1	1	1	1	1	1
MS/MSD	5%	3		1	1	1	1	1	1
Trip Blank <sup>(B)</sup>	-	--		--	--	12	--	--	--
<b>Total Number of Samples</b>	<b>57</b>		<b>15</b>		<b>15</b>		<b>27</b>		<b>7</b>

**Notes:**

<sup>(A)</sup> Arsenic, Copper, & Chromium. If chromium exceeds 11 µg/L in any effluent sample, additional effluent samples will be collected and analyzed for hexavalent and trivalent chromium.

<sup>(B)</sup> One trip blank per event when BETX samples are collected.

Flow rate and pH are measured continuously.

Numbers indicate the number of samples during each event.

## *Figures*





- Groundwater Monitoring Stations
- Surface Water Monitoring Stations
- St. Regis Paper Co Site
- City Dump Area



Feet  
400 0 400 800 1,200 1,600

Meters  
150 0 150 300 450 600

Figure 2

MONITORING STATIONS  
St. Regis Paper Company Site  
Cass Lake, MN



- ⊕ Extraction well (Control point based on measured elevation and extraction rate)
- Staff gauge
- ◐ Monitoring well/piezometer
- Control point
- Groundwater elevation contour  
(Contour interval = 0.5 ft)
- PCP concentration contour (ug/L) - May 2007  
(Dashed where inferred)
- Groundwater flow path (reverse particle trace)
- Groundwater flow path (forward particle trace)
- ▨ Approximate hydraulic capture zone

Note: Only points used to generate contours shown on map

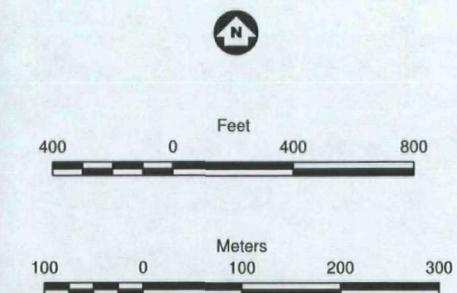
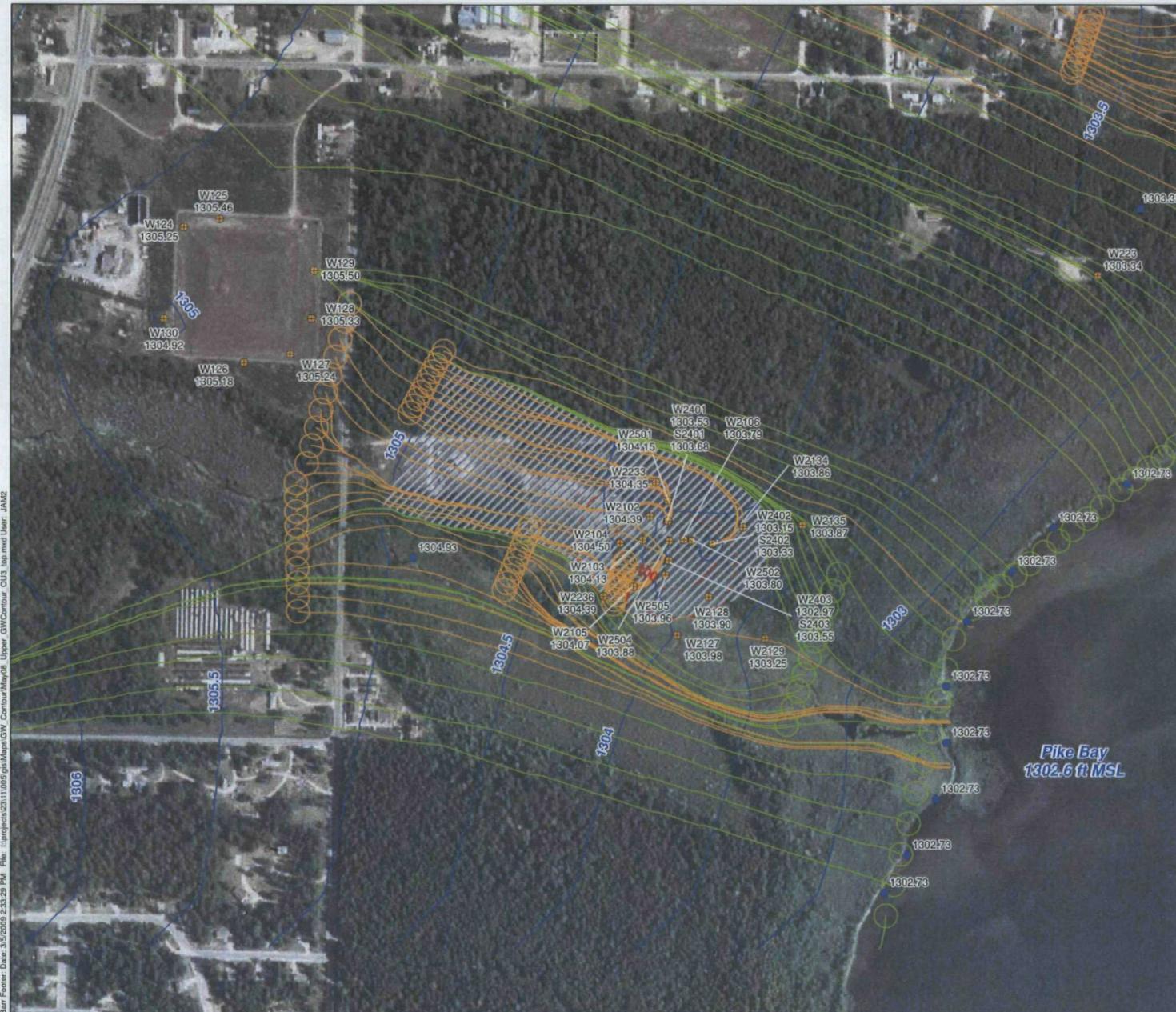


Figure 3

GROUNDWATER ELEVATIONS  
SURFICIAL AQUIFER - OU1  
MAY 16, 2008  
St. Regis Paper Company Site  
Cass Lake, Minnesota



- ⊕ Extraction well
- Staff gauge
- ◐ Monitoring well/piezometer
- Control point
- Groundwater elevation contour  
(Contour interval = 0.5 ft)
- PCP concentration contour (ug/L) - May 2007  
(Dashed where inferred)
- Groundwater flow path (reverse particle trace)
- Groundwater flow path (forward particle trace)
- ▨ Approximate hydraulic capture zone

Note: Only points used to generate contours shown on map

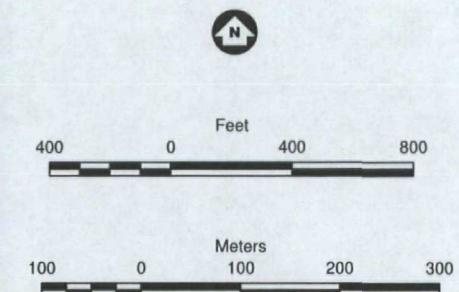
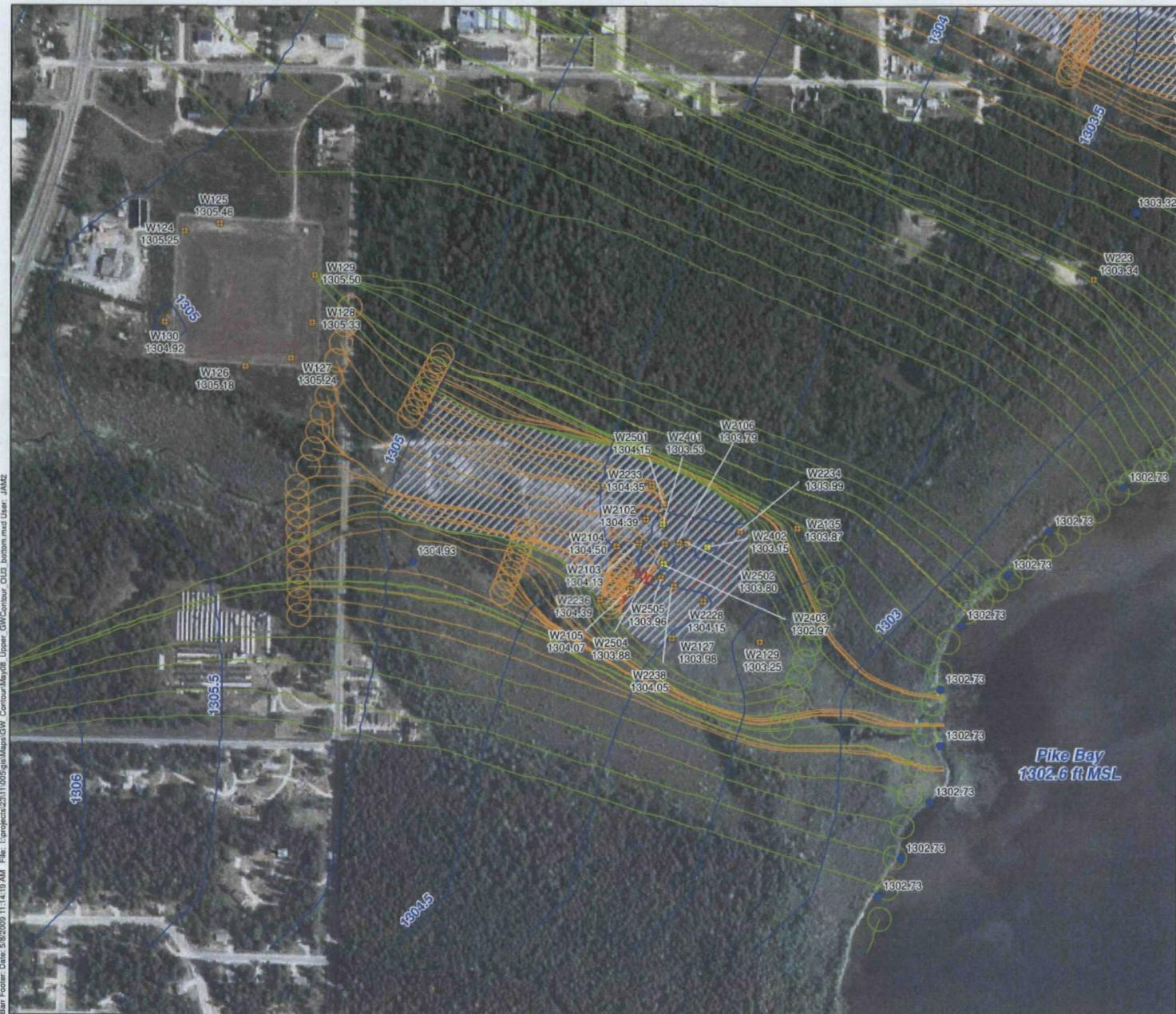


Figure 4

GROUNDWATER ELEVATIONS  
TOP OF SURFICIAL AQUIFER - OU3  
MAY 16, 2008  
St. Regis Paper Company Site  
Cass Lake, Minnesota



- Extraction well (Control point based on measured elevation and extraction rate)
- Staff gauge
- Monitoring well/piezometer
- Control point
- Groundwater elevation contour (Contour interval = 0.5 ft)
- PCP concentration contour (ug/L) - May 2007 (Dashed where inferred)
- Groundwater flow path (reverse particle trace)
- Groundwater flow path (forward particle trace)
- ▨ Approximate hydraulic capture zone

Note: Only points used to generate contours shown on map

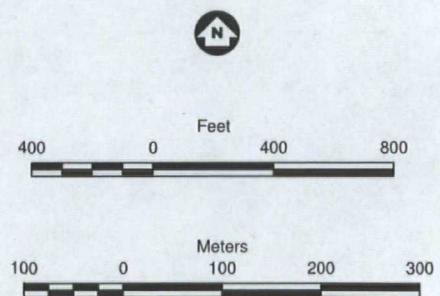


Figure 5

GROUNDWATER ELEVATIONS  
BOTTOM OF SURFICIAL AQUIFER - OU3  
MAY 16, 2008  
St. Regis Paper Company Site  
Cass Lake, Minnesota

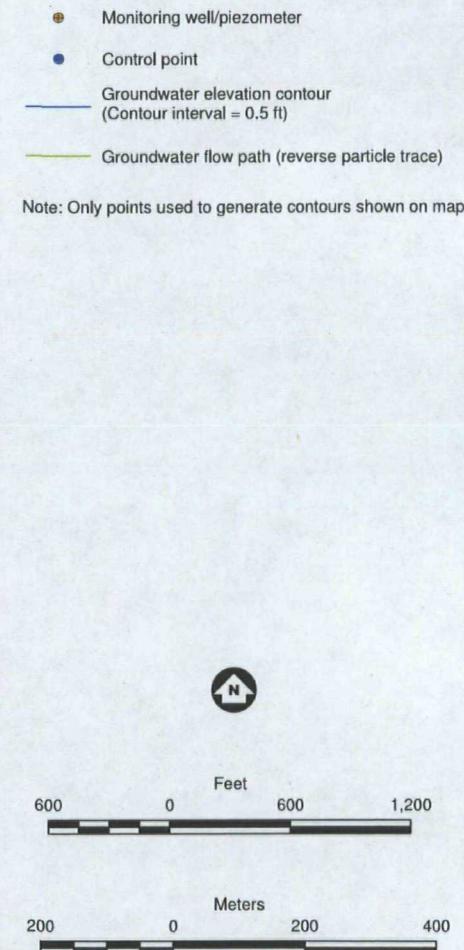
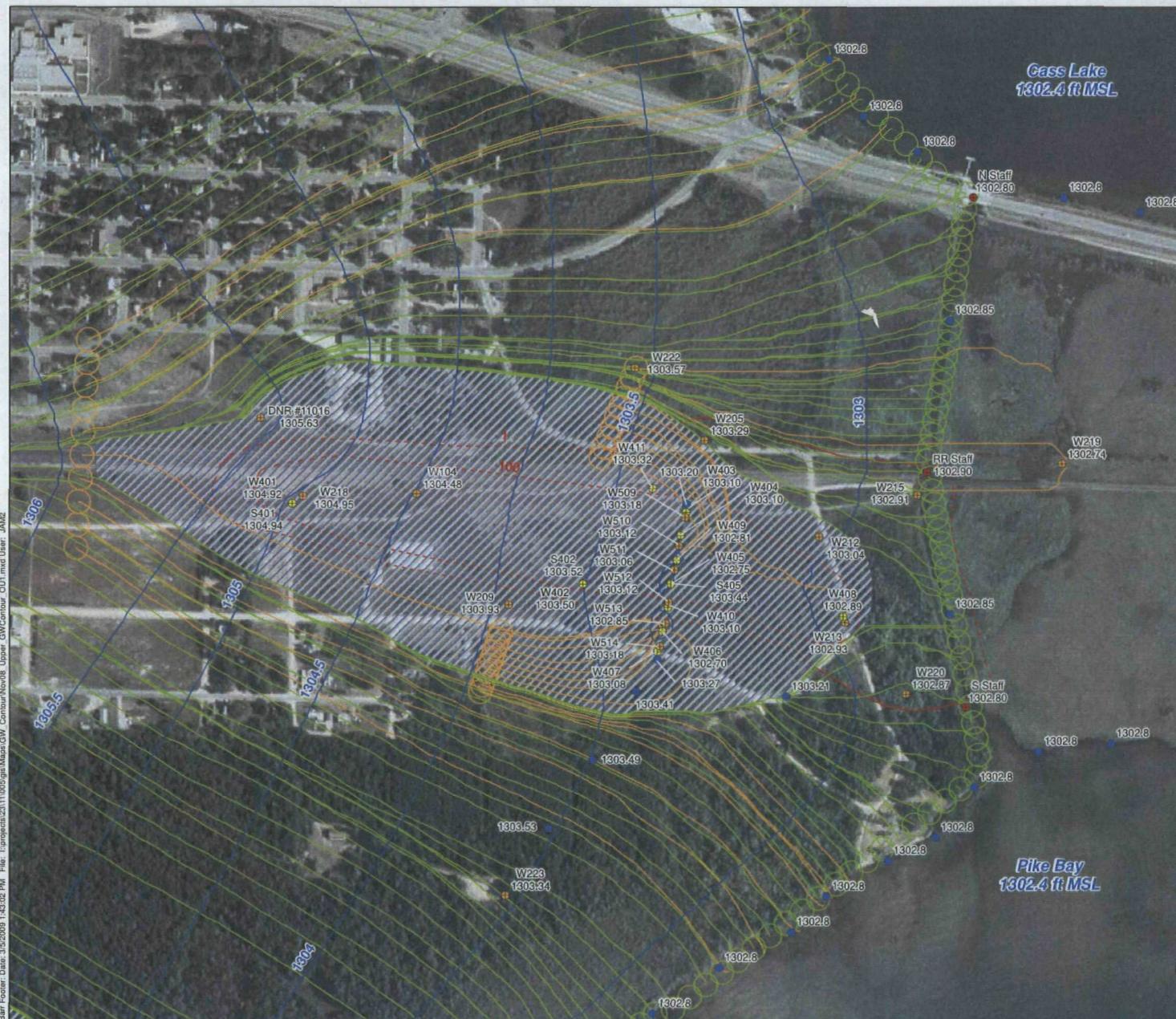


Figure 6

GROUNDWATER ELEVATIONS  
LOWER AQUIFER  
MAY 16, 2008  
St. Regis Paper Company Site  
Cass Lake, Minnesota



- ⊕ Extraction well
- Staff gauge
- ◎ Monitoring well/piezometer
- Control point
- Groundwater elevation contour  
(Contour interval = 0.5 ft)
- PCP concentration contour (ug/L) - May 2007  
(Dashed where inferred)
- Groundwater flow path (reverse particle trace)
- Groundwater flow path (forward particle trace)
- ▨ Approximate hydraulic capture zone

Note: Only points used to generate contours shown on map

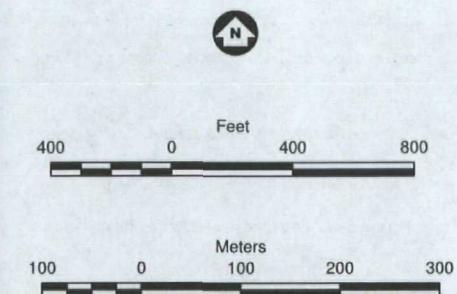
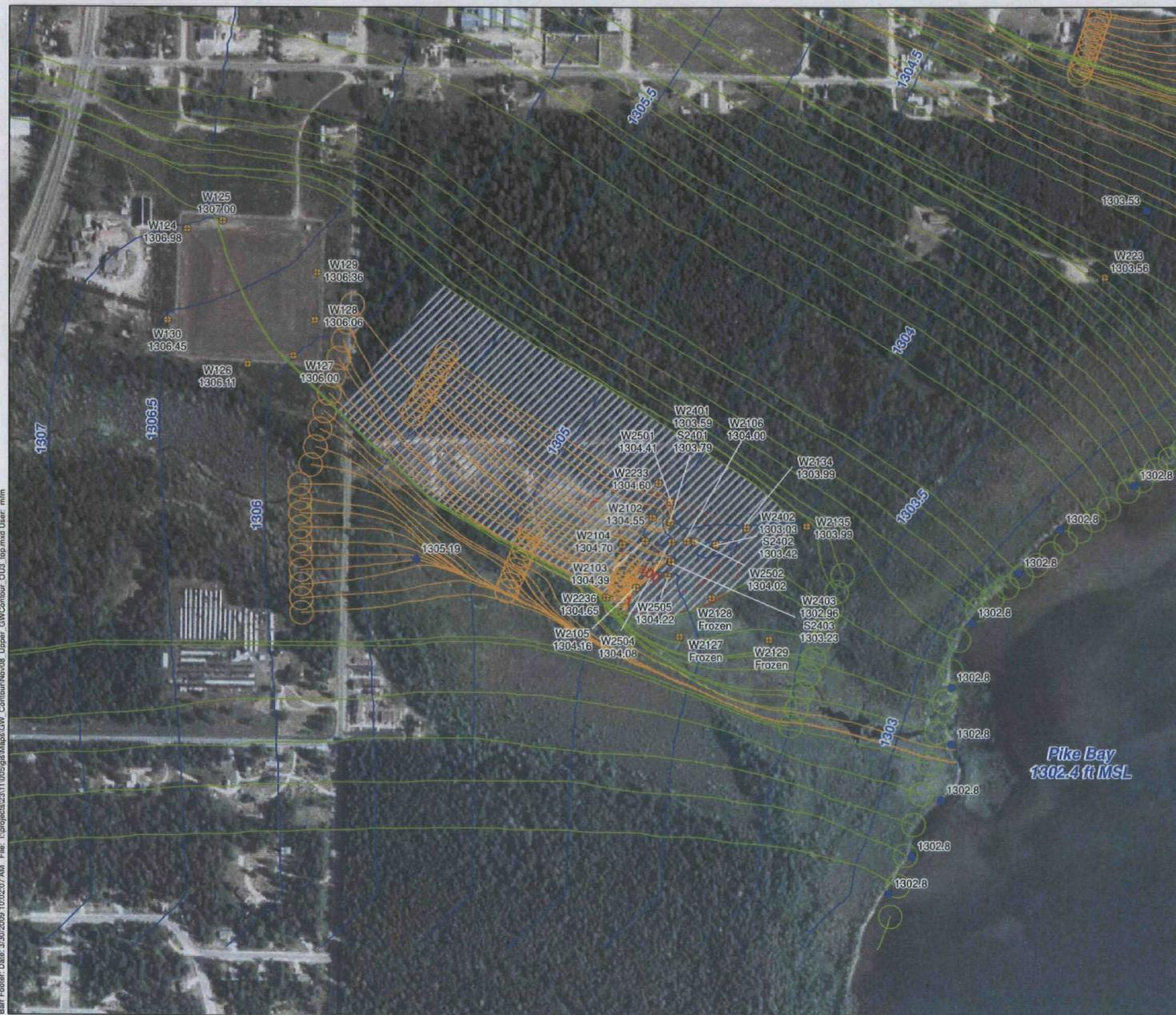


Figure 7

GROUNDWATER ELEVATIONS  
SURFICIAL AQUIFER - OU1  
NOVEMBER 19, 2008  
St. Regis Paper Company Site  
Cass Lake, Minnesota



- ⊕ Extraction well
- Staff gauge
- ◐ Monitoring well/piezometer
- Control point
- Groundwater elevation contour  
(Contour interval = 0.5 ft)
- PCP concentration contour (ug/L) - May 2007  
(Dashed where inferred)
- Groundwater flow path (reverse particle trace)
- Groundwater flow path (forward particle trace)
- ▨ Approximate hydraulic capture zone

**Note:**  
Only points used to generate contours shown on map.  
Partial water level data set due to frozen conditions in the wetland area.

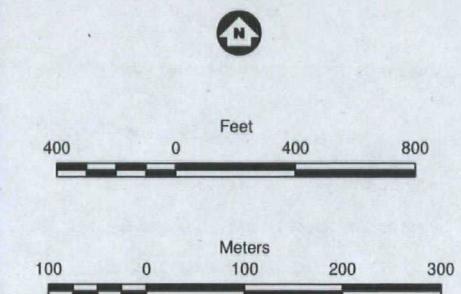
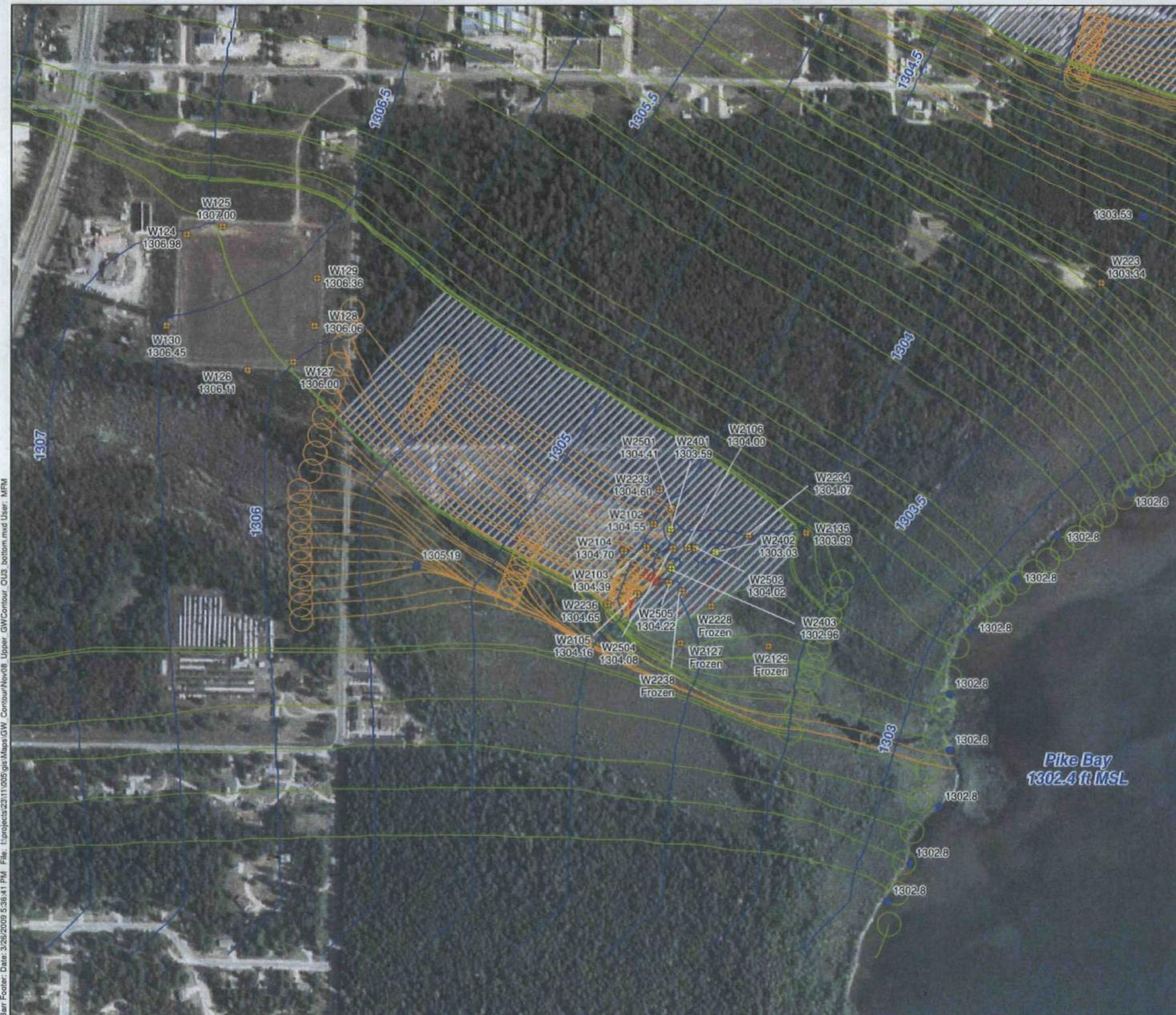


Figure 8

GROUNDWATER ELEVATIONS  
TOP OF SURFICIAL AQUIFER - OU3  
NOVEMBER 19, 2008  
St. Regis Paper Company Site  
Cass Lake, Minnesota



- Extraction well
- Staff gauge
- Monitoring well/piezometer
- Control point
- Groundwater elevation contour  
(Contour interval = 0.5 ft)
- PCP concentration contour (ug/L) - May 2007  
(Dashed where inferred)
- Groundwater flow path (reverse particle trace)
- Groundwater flow path (forward particle trace)
- Approximate hydraulic capture zone

**Note:**  
Only points used to generate contours shown on map.

Partial water level data set due to frozen conditions in the wetland area.

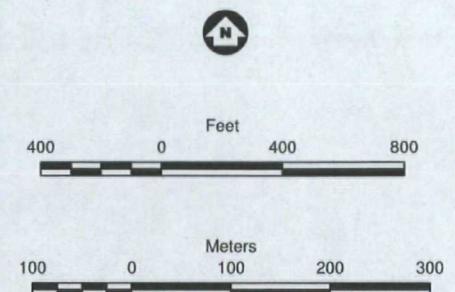


Figure 9

GROUNDWATER ELEVATIONS  
BOTTOM OF SURFICIAL AQUIFER - OU3  
NOVEMBER 19, 2008  
St. Regis Paper Company Site  
Cass Lake, Minnesota



Figure 10

GROUNDWATER ELEVATIONS  
LOWER AQUIFER  
NOVEMBER 19, 2008  
St. Regis Paper Company Site  
Cass Lake, Minnesota



Figure 11  
PENTACHLOROPHENOL DISTRIBUTION  
SURFICIAL AQUIFER  
St. Regis Paper Company Site  
Cass Lake, MN





0.13U PCP in ug/L

- Groundwater Monitoring Stations
- Orange Box: St. Regis Paper Co Site
- Teal Box: City Dump Area



Feet  
400 0 400 800 1,200 1,600 2,000

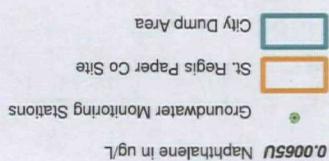
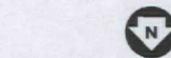
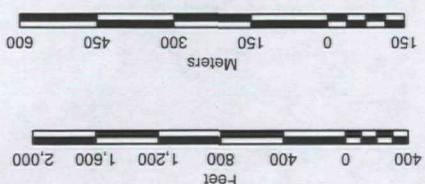
Meters  
150 0 150 300 450 600

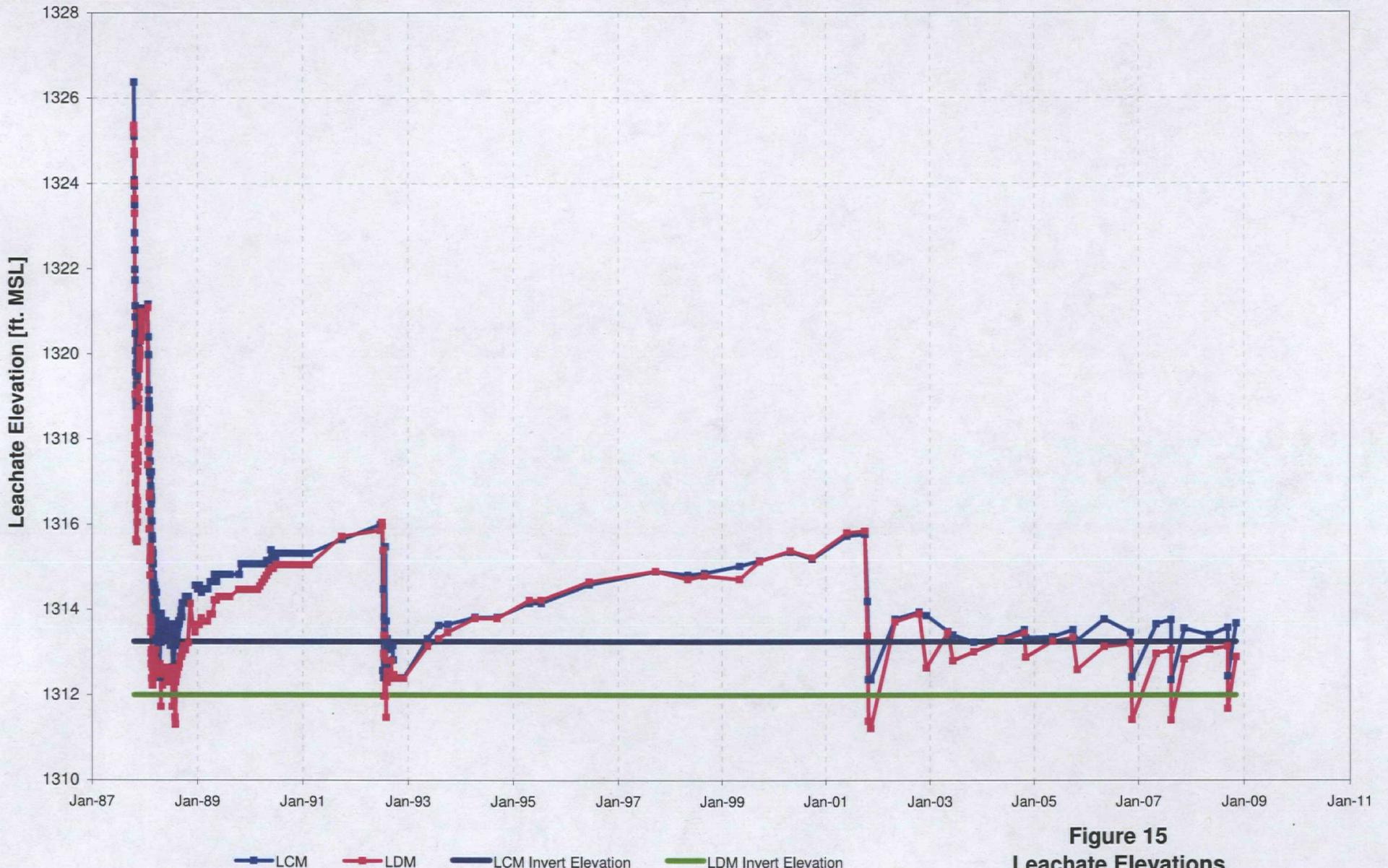
Figure 13

PENTACHLOROPHENOL DISTRIBUTION  
LOWER AQUIFER  
St. Regis Paper Company Site  
Cass Lake, MN

Cass Lake, MN  
St. Regis Paper Company Site  
LOWER AQUIFER  
NAPHTHALENE DISTRIBUTION

Figure 14





**Figure 15**  
**Leachate Elevations**  
**OU2 - Containment Vault**  
**St. Regis Paper Company Site**

## *Appendices*

## *Appendix A*

### *Quality Control Review*

## **Appendix A**

### **Quality Control Review 2008 Annual Monitoring Report St. Regis Paper Company Site**

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Laboratory Quality Control.....	3
Conclusions.....	5

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- Table A-2      Field Duplicate Sample Results
- Table A-3      Laboratory Blank Sample Results

## **Introduction**

A review of the quality assurance/quality control data was conducted to assess the integrity of the sampling procedures and the validity of the analytical results for monitoring of the St. Regis Paper Company Site in 2008. The quality control practices and procedures followed during the sampling and analysis of samples are detailed in the Quality Assurance Project Plan (QAPP) for *Monitoring Activities Required by the U.S. EPA Unilateral Administrative Order January 1995, St. Regis Paper Company Superfund Site, Cass Lake, Minnesota (August 2006)*, prepared by Barr Engineering Company.

Samples collected at the site were analyzed using the EPA approved methods as defined on Table B-8 of the QAPP. The laboratories include: Columbia Analytical Services Inc. (CAS) in Kelso, Washington and Houston, Texas (dioxin laboratory) and by Legend Technical Services, Inc. in St. Paul, Minnesota.

## **Data Validation**

The analytical data from the monitoring program was reviewed in conformance with the validation procedures detailed in the Quality Assurance Project Plan (QAPP) for *Monitoring Activities Required by the U.S. EPA Unilateral Administrative Order January 1995, St. Regis Paper Company Superfund Site, Cass Lake, Minnesota (August 2006)*, prepared by Barr Engineering Company.

In general, the areas covered by the validation process are:

- EPA Recommended Holding Times
- Blank Analyses
- Spike and Duplicate Analyses
- Surrogate Recoveries
- Overall Assessment

These areas were evaluated with the criteria in the EPA data validation or specific method guidelines. Any data qualifiers are Barr defined qualifiers, not EPA defined qualifiers.

## **Field Quality Control**

A review of the analytical results for the field blanks and field duplicates was conducted to assess the integrity of the sampling procedures and the analytical results for samples collected during the monitoring period.

Field blanks and trip blanks were collected and analyzed to monitor for contamination from any equipment decontamination, sample collection, transport, storage or laboratory procedures.

Field and trip blank data is summarized in Table A-1. Field blanks were submitted above the required rate of one field blank for every 20 investigation samples per the QAPP requirements. No gross systematic contamination issues were observed. However, trace concentrations of many target compounds were detected one or more of the field blank samples. Because the laboratory is required (per the QAPP or method 8290) to evaluate concentrations to the MDL, these detectable trace concentrations are not unexpected and are within the normal operating conditions in the laboratory. Associated positive sample concentrations less than 5 five times the associated blank sample concentration have been qualified using a “<” symbol at the level of detection. The U.S. EPA data validation guidelines (Guidelines) indicate that when sample concentrations are detected at or near the concentrations detected in the blank samples, the results should be presented as the CRQL/MRL, with a corresponding “<” (less than) or “U” qualifier. However, for this project, the levels of the corresponding CRQLs are far greater than the final laboratory reporting limits (MRLs and MDLs) presented and approved in the QAPP. Therefore, when project sample results are less than 5 times the associated blank sample concentrations, thus suspected false positives, they are shown at the concentration reported in the sample, with a “<”.

Field duplicate samples were collected and analyzed to determine the precision of the analytical data. The precision was determined by calculating the relative percent difference (RPD) for the data pairs. The RPD formula is as follows:

$$RPD = \frac{(D1 - D2)}{(D1 + D2)/2} \times 100\%$$

Where: D1 = concentration of the native sample  
D2 = concentration of the duplicate sample

In 2008, field duplicate samples were collected from wells W105R, W112, W212, W219, W220, W2106, W2234, W2336, W2238 and W406, and from the groundwater treatment process effluent (ADSA, ADSB, and ADSC). The RPD results will be dependent on the heterogeneity of the samples. High RPDs are expected when results are at or near the reporting or method detection limits (as applicable) and do not always indicate poor precision. The majority of the field duplicate RPDs met the established acceptance criteria for 2008 outlined in the QAPP. Very few RPD results fell outside acceptance criteria and associated sample results were qualified accordingly. Notably, RPDs for naphthalene, methylnaphthalene, and pentachlorophenol exceeded acceptance criteria (100%, 42%, and 152%), and both duplicate and associated native samples were qualified accordingly. Additionally, the RPD for copper was greater than 100% and was qualified for this deviation. However, no historical data is available for copper from this location, and therefore, close review of the 2009 data should provide additional information. All remaining RPDs met acceptance criteria indicating an acceptable level of reproducibility during the sampling and analytical process. Field duplicate results are presented in Table A-2.

## **Laboratory Quality Control**

Laboratory based QC procedures were used to determine and monitor the validity of the data generated from the analytical systems used for sample analysis. Established acceptance criteria were used to measure the precision and accuracy obtained from the analytical process.

All samples met established EPA recommended holding time requirements for extraction and analysis.

Both field and laboratory duplicate samples were analyzed to determine the data precision as measured by the reproducibility of the field sampling, laboratory analysis, and the degree of sample homogeneity.

The data accuracy was monitored by evaluating the surrogate spike recoveries (or labeled compound recoveries for dioxin/furans), sample matrix spike (MS) and/or matrix spike duplicate (MSD) recoveries (when available), and laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recoveries. The acceptance criteria used for the accuracy are presented in the laboratory reports and correspond with Tables B-11 and B-12 of the approved QAPP. In general, these are laboratory-based QC limits associated with the specific SW846 methodologies and are

subject to change based on laboratory performance data and as routinely updated in the laboratory SOPs.

All surrogate standard recoveries (or labeled compound recoveries for dioxin/furans) were reviewed for the organic analyses including PAHs, PCP, BTEX, Dioxin/Furans, and DRO. Except for DRO analyses and/or where samples required dilutions, surrogate recoveries fell within the acceptance windows for the percent recovery. No qualifiers were applied to the DRO surrogate outliers as surrogates are not a DRO method requirement and the deviations were minor. In cases where the samples require dilution, calculation of the percent recoveries is not applicable and no further or corrective action is required. With one exception, a few labeled compound recoveries for the fell beyond the laboratory acceptance limits, but no qualification was applied to the samples because the percent recovery met the acceptance criteria from the National Functional Guidelines (NFG). The field blank sample from November 2008 showed low percent recoveries of all labeled standards. The laboratory re-extracted and re-analyzed the sample with similar results in both the percent recoveries and the native congeners concentrations. The sample has been qualified to indicate this deviation. No other qualifiers have been assigned due to deviations in surrogate (or labeled compound) recoveries in any of the organic analyses results.

Matrix spike (MS) and matrix spike duplicate (MSD) (when available) and laboratory control sample (LCS) and laboratory control sample duplicate sample (LCSD) were reviewed to ensure the accuracy and precision of the analytical systems. Matrix spike and matrix spike duplicates were collected and analyzed as required in the QAPP. No significant systematic matrix interferences impacted final analytical results in 2008. The majority of the MS and MSD samples met laboratory established acceptance criteria, however, some variability is expected. Matrix spike and matrix spike duplicate percent recoveries are not applicable when native sample concentrations are greater than 4 times the spike amounts. Very few MS/MSD results fell outside acceptance criteria, indicating a potential matrix bias, but when required, associated sample results have been qualified with an "\*" in the database and associated data summary tables.

LCSs and LCSDs were prepared and analyzed as required. The vast majority of the LCS/LCSD percent recoveries and RPDs met acceptance criteria, indicating in-control analytical systems. On two occasions (March and June 2008), the LCS/LCSD percent recovery was above the acceptance limits for metals and dioxins, indicating a potential high bias. Associated samples with metal and dioxin detections were qualified accordingly, signifying its potential high bias. Following EPA

guidance, samples with non-detect results are unaffected and have not been qualified. No other deviations of the LCS/LCSD recoveries and associated RPDs occurred.

Sample duplicates (non-spiked, for metals analyses) were performed at the required frequency and all sample duplicate results met the laboratory's acceptance criteria.

Laboratory method (or preparation) blanks were prepared and analyzed at the required frequency. Laboratory method blank results are presented in Table A-3. As previously discussed, no gross systematic contamination issues were observed. Trace detections of target compounds are expected when evaluating concentrations to the MDLs. Associated positive sample concentrations less than 5 five times the associated laboratory, method, or field blank sample concentration have been qualified using a “<” symbol at the level of detection as previously stated.

The quality control aspects of the dioxin analysis were all met. As stated above, the labeled compound percent recoveries met established acceptance criteria. All signal to noise ratios met acceptance criteria, and any deviations in ion abundance ratios have been qualified with EMPC (estimated maximum possible concentration). No other qualifiers were necessary.

A comparison of the current sample data with historical data is completed to note any deviations in the data. Where historical data is available, the 2008 data correspond relatively well.

## **Conclusions**

The quality control aspects of the monitoring program overall at the Cass Lake site demonstrate compliance to the data quality objectives as measured by the quality control samples. All analytical data were validated and determined useable with the qualifiers applied in the summary tables.

## ***Tables***

**Table A-1**  
**Field and Trip Blank Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location Date Lab	Field Blank 5/26/2008 CAS	Field Blank 5/28/2008 CAS	Field Blank 6/9/2008 CAS	Field Blank 8/22/2008 CAS	Field Blank 9/8/2008 CAS	Field Blank 11/20/2008 CAS
<b>TPHs</b>						
<b>Diesel Range Organics</b>	<32	--	--	65	<72	--
<b>Diesel Range Organics-Silica gel cleanup</b>	--	--	--	--	--	<22
<b>Metals</b>						
<b>Arsenic</b>	--	<b>0.24 j</b>	<0.06	--	--	--
<b>Chromium</b>	--	<0.16	<b>0.12 j</b>	--	--	--
<b>Copper</b>	--	<0.02	<b>0.04 j</b>	--	--	--

Detections are presented in **bold**.

-- Not analyzed.

j Reported value is less than the stated quantitation limit  
and should be considered an estimated value.

**Table A-1**  
**Field and Trip Blank Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location Date Lab	Field Blank 4/4/2008 CAS	Field Blank 5/6/2008 CAS	Field Blank 5/16/2008 CAS	Field Blank 5/18/2008 CAS	Field Blank 5/18/2008 CAS	Field Blank 5/20/2008 CAS	Field Blank 5/24/2008 CAS	Field Blank 5/26/2008 CAS	Field Blank 5/27/2008 CAS	Field Blank 5/28/2008 CAS	Field Blank 5/29/2008 CAS	Field Blank 8/5/2008 CAS	Field Blank 8/22/2008 CAS	Field Blank 11/20/2008 CAS	Field Blank 12/8/2008 CAS
<b>SVOCs</b>															
<b>2-Methylnaphthalene</b>	--	<b>0.0096 j</b>	<b>0.018 j</b>	<b>0.0075 j</b>	<b>0.0085 j</b>	<b>0.017 j</b>	<b>0.029</b>	<b>0.033</b>	<0.24	<0.24	<0.24	--	<b>0.0070 j</b>	<b>0.0055 j</b>	--
Acenaphthene	--	<0.0099 j	<b>0.0066 j</b>	<0.0045	<0.0044	<0.0044	<b>0.0069 j</b>	<b>0.0089 j</b>	<0.29	<0.29	<0.29	--	<0.0058	<0.0045	--
Acenaphthylene	--	<0.0034	<0.0034	<0.0035	<0.0034	<0.0034	<0.0034	<0.0034	<0.24	<0.24	<0.24	--	<0.0045	<0.0035	--
Anthracene	--	<0.0036	<0.0036	<0.0037	<0.0036	<0.0036	<0.0036	<0.0036	<0.62	<0.62	<0.62	--	<0.0047	<0.0037	--
Benzo(a)anthracene	--	<0.0026	<0.0026	<0.0027	<0.0026	<0.0026	<0.0026	<0.0026	<0.60	<0.60	<0.60	--	<0.0034	<0.0027	--
Benzo(a)pyrene	--	<0.0043	<0.0043	<0.0044	<0.0043	<0.0043	<0.0043	<0.0043	<0.66	<0.66	<0.66	--	<0.0056	<0.0044	--
Benzo(b)fluoranthene	--	<0.0023	<0.0023	<0.0024	<0.0023	<0.0023	<0.0023	<0.0023	<0.59	<0.59	<0.59	--	<0.0030	<0.0024	--
Benzo(g,h,i)perylene	--	<0.0029	<0.0029	<0.0030	<0.0029	<0.0029	<0.0029	<0.0029	<0.82	<0.82	<0.82	--	<0.0038	<0.0030	--
Benzo(k)fluoranthene	--	<0.0025	<0.0025	<0.0026	<0.0025	<0.0025	<0.0025	<0.0025	<0.83	<0.83	<0.83	--	<0.0033	<0.0026	--
Chrysene	--	<0.0034	<0.0034	<0.0035	<0.0034	<0.0034	<0.0034	<0.0034	<0.79	<0.79	<0.79	--	<0.0045	<0.0035	--
Dibenz(a,h)anthracene	--	<0.0025	<0.0025	<0.0026	<0.0025	<0.0025	<0.0025	<0.0025	<0.76	<0.76	<0.76	--	<0.0033	<0.0026	--
Fluoranthene	--	<0.0044	<0.0044	<0.0045	<0.0044	<0.0044	<0.0044	<0.0044	<0.66	<0.66	<0.66	--	<0.0058	<0.0045	--
Fluorene	--	<0.0038	<0.0038	<0.0039	<0.0038	<0.0038	<b>0.0075 j</b>	<b>0.0087 j</b>	<0.33	<0.33	<0.33	--	<0.0050	<0.0039	--
Indeno(1,2,3-cd)pyrene	--	<0.0026	<0.0026	<0.0027	<0.0026	<0.0026	<0.0026	<0.0026	<0.69	<0.69	<0.69	--	<0.0034	<0.0027	--
Naphthalene	--	<b>0.031</b>	<b>0.087</b>	<b>0.031</b>	<b>0.057</b>	<0.088	<b>0.14</b>	<b>0.15</b>	<0.37	<0.37	<0.37	--	<b>0.033</b>	<b>0.032</b>	--
Pentachlorophenol	<0.080	--	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<b>3.2 j</b>	<2.5	<2.5	<0.080	<0.080	<0.80	<0.080
Phenanthrene	--	<b>0.0054 j</b>	<b>0.0051 j</b>	<0.0051	<0.0050	<0.0050	<b>0.0076 j</b>	<b>0.010 j</b>	<0.49	<0.49	<0.49	--	<b>0.0069 j</b>	<0.0051	--
Pyrene	--	<0.0035	<0.0035	<0.0036	<0.0035	<0.0035	<0.0035	<0.0035	<0.74	<0.74	<0.74	--	<0.0046	<0.0036	--

Detections are presented in **bold**.

-- Not analyzed.

j Reported value is less than the stated quantitation limit  
and should be considered an estimated value.

**Table A-1**  
**Field and Trip Blank Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L.)**

Location Date Lab	Field Blank 5/26/2008 Legend	Field Blank 5/28/2008 Legend
<b><u>SVOCs</u></b>		
<b>1,6-Dinitropyrene</b>	<0.0053	<0.0052
<b>1,8-Dinitropyrene</b>	<0.0042	<0.0041
<b>1-Nitropyrene</b>	<0.001	<0.0010
<b>2-Nitrofluorene</b>	<0.00089	<0.00087
<b>3-Methylcholanthrene</b>	<0.0009	<0.00088
<b>5-Methylchrysene</b>	<0.00088	<0.00086
<b>5-Nitroacenaphthene</b>	<0.0017	<0.0017
<b>6-Nitrochrysene</b>	<0.0018	<0.0018
<b>7,12-Dimethylbenz(a)anthracene</b>	<0.0019	<0.0019
<b>7h-Dibenzo(c,g)carbazole</b>	<0.00081	<0.00080
<b>Benzo(j)fluoranthene</b>	<0.01	<0.01
<b>Dibenz(a,h)acridine</b>	<0.0027	<0.0027
<b>Dibenz(a,j)acridine</b>	<0.0039	<0.0038
<b>Dibenzo(a,e)pyrene</b>	<0.0007	<0.00069
<b>Dibenzo(a,h)pyrene</b>	<0.0028	<0.0028
<b>Dibenzo(a,i)pyrene</b>	<0.0014	<0.0014

Detections are presented in **bold**.

— Not analyzed.

j Reported value is less than the stated quantitation limit  
and should be considered an estimated value.

**Table A-1**  
**Field and Trip Blank Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L, unless noted otherwise)**

Location Date Lab	Field Blank 5/26/2008 CAS	Field Blank 7/7/2008 CAS	Field Blank 8/22/2008 CAS	Field Blank 11/20/2008 CAS	Trip Blank 1/9/2008 CAS	Trip Blank 2/6/2008 CAS	Trip Blank 2/18/2008 CAS	Trip Blank 3/6/2008 CAS	Trip Blank 4/4/2008 CAS	Trip Blank 5/6/2008 CAS	Trip Blank 5/20/2008 CAS
<b><u>VOCs</u></b>											
Benzene	<0.045	<0.045	<b>0.050 j</b>	<0.045	<0.14	<0.14	<0.14	<0.14	<0.14	<0.045	<0.045
Ethyl benzene	<0.042	<0.042	<b>0.060 j</b>	<0.10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.042	<0.042
Toluene	<b>0.30 j</b>	<b>0.34 j</b>	<b>2.8</b>	<b>6.1</b>	<b>0.32 j</b>	<0.11	<b>0.53</b>	<0.11	<0.11	<b>0.080 j</b>	<b>0.070 j</b>
Xylene m & p	<b>0.11 j</b>	<b>0.090 j</b>	<b>0.16 j</b>	<0.32	<0.22	<0.22	<0.22	<0.22	<0.22	<0.078	<0.078
Xylene o-	<b>0.050 j</b>	<b>0.060 j</b>	<b>0.070 j</b>	<0.17	<0.11	<0.11	<0.11	<0.11	<0.11	<0.037	<0.037

Location Date Lab	Trip Blank 5/24/2008 CAS	Trip Blank 5/24/2008 CAS	Trip Blank 5/27/2008 CAS	Trip Blank 6/9/2008 CAS	Trip Blank 7/7/2008 CAS	Trip Blank 9/8/2008 CAS	Trip Blank 10/6/2008 CAS	Trip Blank 11/4/2008 CAS	Trip Blank 11/19/2008 CAS
<b><u>VOCs</u></b>									
Benzene	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045
Ethyl benzene	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042
Toluene	<0.048	<b>0.050 j</b>	<0.048	<b>0.27 j</b>	<0.048	<0.048	<0.048	<0.048	<0.048
Xylene m & p	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078
Xylene o-	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037

Detections are presented in **bold**.

j Reported value is less than the stated quantitation limit and should be considered an estimated value.

**Table A-1**  
**Field and Trip Blank Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in pg/L)**

Location Date Lab	Field Blank 5/26/2008 CAS	Field Blank 8/22/2008 CAS	Field Blank 11/4/2008 CAS	Field Blank 11/20/2008 CAS
<b>Dioxins</b>				
<b>2,3,7,8-TCDD</b>	<0.212	<0.182	<1.01*	<0.287
<b>1,2,3,7,8-Dioxin penta</b>	<0.340	<0.241	<2.92*	<0.238
<b>1,2,3,4,7,8-Dioxin, hexa</b>	<0.316	<0.562	<2.85*	<0.427
<b>1,2,3,6,7,8-Dioxin, hexa</b>	<0.291	<0.459	<2.53*	<0.378
<b>1,2,3,7,8,9-Dioxin, hexa</b>	<0.301	<0.502	<2.75*	<0.412
<b>1,2,3,4,6,7,8-Dioxin, hepta</b>	<0.320	<b>1.80 j</b>	<b>3.46 j EMPC</b>	<0.413
<b>Dioxin octa</b>	<2.16	10.1 j	17.5 j*	<7.58
<b>Furans</b>				
<b>2,3,7,8-TCDF</b>	<0.341	<0.134	<1.36*	<0.220
<b>1,2,3,7,8-Dibenzofuran, penta</b>	<0.188	<0.184	<0.998*	<0.251
<b>2,3,4,7,8-Dibenzofuran, penta</b>	<0.185	<0.179	<0.988*	<0.249
<b>1,2,3,4,7,8-Dibenzofuran, hexa</b>	<0.215	<0.259	<1.29*	<0.187
<b>1,2,3,6,7,8-Dibenzofuran, hexa</b>	<0.213	<0.242	<1.24*	<0.180
<b>1,2,3,7,8,9-Dibenzofuran, hexa</b>	<0.245	<0.298	<1.61*	<0.234
<b>2,3,4,6,7,8-Dibenzofuran, hexa</b>	<0.223	<0.274	<1.38*	<0.200
<b>1,2,3,4,6,7,8-Dibenzofuran, hepta</b>	<0.293	<0.266	<1.91*	<0.188
<b>1,2,3,4,7,8,9-Dibenzofuran, hepta</b>	<0.363	<0.352	<2.61*	<0.255
<b>Dibenzofuran octa</b>	<0.720	<b>1.29 j</b>	<1.83*	<0.458

Detections are presented in bold.

\* Estimated value, QA/QC criteria not met.

j Reported value is less than the stated quantitation limit  
and should be considered an estimated value.

EMPC Estimated Maximum Possible Concentration.

**Table A-2**  
**Field Duplicate Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location Date Lab Dup	ADSA 9/8/2008 CAS	ADSA 9/8/2008 CAS	RPD	ADSB 12/8/2008 CAS	ADSB 12/8/2008 CAS	RPD	ADSC 6/9/2008 CAS	ADSC 6/9/2008 CAS	RPD	W212 8/22/2008 CAS	W212 8/22/2008 CAS	RPD
<b>TPHs</b>												
Diesel Range Organics	<36	<22	--	--	--		37 j	--	--	<100	<110	--
<b>Metals</b>												
Arsenic	1.05	--		0.68	--		1.32	1.14	15	--	--	
Chromium	0.32	--		0.196 j	--		<0.32	<0.28	--	--	--	
Copper	1.24	--		0.41	--		2.06	2.04	0.98	--	--	

Location Date Lab Dup	W220 5/26/2008 CAS	W220 5/26/2008 CAS	RPD	W2238 5/28/2008 CAS	W2238 5/28/2008 CAS	RPD
<b>TPHs</b>						
Diesel Range Organics	180	<150	--	330	--	--
<b>Metals</b>						
Arsenic	--	--		6.76	6.88	1.8
Chromium	--	--		<0.22	<0.27	--
Copper	--	--		0.95 *	4.03 *	124

**Table A-2**  
**Field Duplicate Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location	ADSC 5/6/2008	ADSC 5/6/2008	RPD	W112 5/18/2008	W112 5/18/2008	RPD	W2106 5/27/2008	W2106 5/27/2008	RPD	W212 8/22/2008	W212 8/22/2008	RPD
Date												
Lab	CAS	CAS		CAS	CAS		CAS	CAS		CAS	CAS	
Dup		DUP			DUP			DUP			DUP	
<b>SVOCs</b>												
Indeno(1,2,3-cd)pyrene	0.0028 j	<0.0026		0.0034 j	<0.0026		<0.69	<0.69		<0.0026	<0.0026	
2-Methylnaphthalene	<0.024	<0.024		<0.0032	<0.0030		72 *	110 *	42	<0.0038	<0.0042	
Acenaphthene	0.054	0.051	5.7	0.013 j	0.012 j	8	89	91	2.2	<0.0044	<0.0044	
Acenaphthylene	<0.0034	<0.0034		<0.0034	<0.0034		5.5 j	4.7 j	16	<0.0034	<0.0034	
Anthracene	0.014 j	0.0091 j	42	<0.0036	<0.0036		5.5 j	5.5 j	0	<0.0036	<0.0036	
Benzo(a)anthracene	0.011 j	0.010 j	9.5	0.0064 j	0.0061 j	4.8	<0.60	<0.60		<0.0026	<0.0026	
Benzo(a)pyrene	<0.0043	<0.0043		<0.0043	<0.0043		<0.66	<0.66		<0.0043	<0.0043	
Benzo(b)fluoranthene	0.0042 j	0.0032 j	27	0.0026 j	<0.0023		<0.59	<0.59		<0.0023	<0.0023	
Benzo(g,h,i)perylene	<0.0029	<0.0029		<0.0029	<0.0029		<0.82	<0.82		<0.0029	<0.0029	
Benzo(k)fluoranthene	<0.0025	<0.0025		<0.0025	<0.0025		<0.83	<0.83		<0.0025	<0.0025	
Chrysene	0.0092 j	0.0075 j	20	<0.0034	<0.0034		<0.79	<0.79		<0.0034	<0.0034	
Dibenz(a,h)anthracene	<0.0025	<0.0025		<0.0025	<0.0025		<0.76	<0.76		<0.0025	<0.0025	
Fluoranthene	0.064	0.058	9.8	0.047	0.046	2.2	<0.66	<0.66		<0.0044	<0.0044	
Fluorene	0.034	0.029	16	0.0053 j	0.0058 j	9	47	45	4.3	<0.0038	<0.0038	
Naphthalene	<0.16	<0.15		<0.0070	<0.018		120 *	290 *	83	<0.022	<0.027	
Phenanthrene	0.061	0.058	5	0.013 j	0.014 j	7.4	13	14	7.4	<0.0050	<0.0050	
Pyrene	0.041	0.036	13	0.046	0.050	8.3	<0.74	<0.74		<0.0035	<0.0035	

**Table A-2**  
**Field Duplicate Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location	W219	W219	RPD	W220	W220	RPD	W2234	W2234	RPD
Date	S/18/2008	S/18/2008		S/26/2008	S/26/2008		S/20/2008	S/20/2008	
Lab	CAS	CAS		CAS	CAS		CAS	CAS	
Dup	DUP	DUP		DUP	DUP		DUP	DUP	
<b>SVOCs</b>									
<b>Indeno(1,2,3-cd)pyrene</b>	<0.0026	<0.0026		<0.011	<0.0026		<b>0.0032 j</b>	<0.0026	
<b>2-Methylnaphthalene</b>	<0.024	<0.026		<0.0081	<b>0.011 j</b>		<0.0023	<0.0023	
<b>Acenaphthene</b>	<b>0.33</b>	<b>0.36</b>	<b>8.7</b>	<0.025	<0.024		<0.0044	<0.0044	
<b>Acenaphthylene</b>	<0.0034	<0.014		<0.0034	<0.0081		<0.0034	<0.0034	
<b>Anthracene</b>	<b>0.041</b>	<b>0.063</b>	<b>42</b>	<b>0.098</b>	<b>0.088</b>	<b>11</b>	<0.0036	<0.0036	
<b>Benzo(a)anthracene</b>	<0.0049	<0.0056		<0.0048	<0.0026		<0.0026	<0.0034	
<b>Benzo(a)pyrene</b>	<0.0043	<0.0043		<b>0.0045 j</b>	<0.0043		<0.0043	<0.0043	
<b>Benzo(b)fluoranthene</b>	<0.0023	<0.0023		<0.0052	<0.0023		<0.0023	<0.0023	
<b>Benzo(g,h,i)perylene</b>	<0.0029	<0.0029		<0.012	<0.0029		<0.0029	<0.0029	
<b>Benzo(k)fluoranthene</b>	<0.0025	<0.0025		<0.0046	<0.0025		<0.0025	<0.0025	
<b>Chrysene</b>	<0.0034	<0.0034		<b>0.0036 j</b>	<0.0034		<0.0034	<0.0034	
<b>Dibenz(a,h)anthracene</b>	<0.0025	<0.0025		<0.0069	<0.0025		<0.0025	<0.0025	
<b>Fluoranthene</b>	<b>0.030</b>	<b>0.028</b>	<b>6.9</b>	<0.0044	<0.0044		<0.0044	<0.0044	
<b>Fluorene</b>	<0.0038	<0.0038		<b>0.26</b>	<b>0.28</b>	<b>7.4</b>	<0.0038	<0.0038	
<b>Naphthalene</b>	<0.055	<0.051		<b>4.9</b>	<b>5.2</b>	<b>5.9</b>	<0.015	<0.011	
<b>Phenanthrene</b>	<b>0.038</b>	<b>0.043</b>	<b>12</b>	<0.012	<0.013		<0.0050	<0.0050	
<b>Pyrene</b>	<b>0.020</b>	<b>0.021</b>		<b>4.9</b>	<b>0.0044 j</b>	<0.0035	<0.0035	<0.0035	

**Table A-2**  
**Field Duplicate Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location	W2236 11/20/2008 CAS	W2236 11/20/2008 CAS	RPD	W2238 5/28/2008 CAS	W2238 5/28/2008 CAS	RPD	W408 5/29/2008 CAS	W408 5/29/2008 CAS	RPD
<b>SVOCs</b>									
Indeno(1,2,3-cd)pyrene	<0.0026	<0.0026		<0.69	<0.69		<0.69	<0.69	
2-Methylnaphthalene	<0.0023	<0.0023		11	12	8.7	0.33 j	1.8 j	138
Acenaphthene	<0.0044	<0.0044		13	14	7.4	0.97 j	5.6 j	141
Acenaphthylene	<0.0034	<0.0034		<0.24	<0.24		<0.24	<0.24	
Anthracene	<0.0036	<0.0036		0.63 j	<0.62		<0.62	<0.62	
Benzo(a)anthracene	<0.0026	<0.0026		<0.60	<0.60		<0.60	<0.60	
Benzo(a)pyrene	<0.0043	<0.0043		<0.66	<0.66		<0.66	<0.66	
Benzo(b)fluoranthene	<0.0023	<0.0023		<0.59	<0.59		<0.59	<0.59	
Benzo(g,h,i)perylene	<0.0029	<0.0029		<0.82	<0.82		<0.82	<0.82	
Benzo(k)fluoranthene	<0.0025	<0.0025		<0.83	<0.83		<0.83	<0.83	
Chrysene	<0.0034	<0.0034		<0.79	<0.79		<0.79	<0.79	
Dibenz(a,h)anthracene	<0.0025	<0.0025		<0.76	<0.76		<0.76	<0.76	
Fluoranthene	<0.0044	<0.0044		<0.66	<0.66		<0.66	<0.66	
Fluorene	<0.0038	<0.0038		8.4 j	7.9 j	6.1	<0.33	1.3 j	
Naphthalene	<0.0046	<0.0035		99	120	19	1.6 j	7.8 j	132
Phenanthrene	<0.012	0.0067 j		4.3 j	4.5 j	4.5	<0.49	<0.49	
Pyrene	<0.0035	<0.0035		<0.74	<0.74		<0.74	<0.74	

**Table A-2**  
**Field Duplicate Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location	W220 5/26/2008 Legend	W220 5/26/2008 Legend DUP	RPD	W2238 5/28/2008 Legend	W2238 5/28/2008 Legend DUP	RPD
<b>SVOCs</b>						
1,6-Dinitropyrene	<0.0056	<0.0056		<0.0052	<0.0052	
1,8-Dinitropyrene	<0.0044	<0.0044		<0.0041	<0.0041	
1-Nitropyrene	<0.0011	<0.0011		<0.0010	<0.0010	
Benzo(j)fluoranthene	<0.011	<0.011		<0.01	<0.01	
Dibenz(a,h)acridine	<0.0029	<0.0029		<0.0027	<0.0027	
Dibenz(a,j)acridine	<0.0041 *	<0.0041 *		<0.0038	<0.0038	
Dibenzo(a,e)pyrene	<0.00074	<0.00074		<0.00069	<0.00069	
Dibenzo(a,h)pyrene	<0.003	<0.003		<0.0028	<0.0028	
Dibenzo(a,i)pyrene	<0.0015	<0.0015		<0.0014	<0.0014	
Dibenzo(a,l)pyrene	<0.0025	<0.0025		<0.0023	<0.0023	
2-Nitrofluorene	<0.00094	<0.00094		<0.00087	<0.00087	
3-Methylcholanthrene	<0.00095	<0.00095		<0.00088	<0.00088	
5-Methylchrysene	<0.00093	<0.00093		<0.00086	<0.00086	
5-Nitroacenaphthene	<0.0018	<0.0018		<0.0017	<0.0017	
6-Nitrochrysene	<0.0019	<0.0019		<0.0018	<0.0018	
7,12-Dimethylbenz(a)anthracene	<0.002	<0.002		<0.0019	<0.0019	
7h-Dibenzo(c,g)carbazole	<0.00086	<0.00086		<0.00080	<0.00080	

**Table A-2**  
**Field Duplicate Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location	ADSA	ADSA	RPD	ADSA	ADSA	RPD	ADSB	ADSB	RPD
Date	4/4/2008	4/4/2008		8/5/2008	8/5/2008		12/8/2008	12/8/2008	
Lab	CAS	CAS		CAS	CAS		CAS	CAS	
Dup	DUP			DUP			DUP		
Pentachlorophenol	660	740	11	<0.080	<0.080		<0.080	<0.080	

Location	W105R	W105R	RPD	W112	W112	RPD	W2106	W2106	RPD	W212	W212	RPD
Date	5/18/2008	5/18/2008		5/18/2008	5/18/2008		5/27/2008	5/27/2008		8/22/2008	8/22/2008	
Lab	CAS	CAS										
Dup	DUP			DUP			DUP			DUP		
Pentachlorophenol	66	65	1.5	<0.080	<0.080		16000	16000	0	110	110	0

Location	W219	W219	RPD	W220	W220	RPD	W2234	W2234	RPD	W2236	W2236	RPD
Date	5/18/2008	5/18/2008		5/26/2008	5/26/2008		5/20/2008	5/20/2008		11/20/2008	11/20/2008	
Lab	CAS	CAS		CAS	CAS		CAS	CAS		CAS	CAS	
Dup	DUP			DUP			DUP			DUP		
Pentachlorophenol	<0.080	<0.080		17	17	0	<0.080	<0.080		<0.80	<0.80	

Location	W2238	W2238	RPD	W408	W408	RPD
Date	5/28/2008	5/28/2008		5/29/2008	5/29/2008	
Lab	CAS	CAS		CAS	CAS	
Dup	DUP			DUP		
Pentachlorophenol	3.4 j	4.1 j	19	84 *	620 *	152

**Table A-2**  
**Field Duplicate Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in pg/L)**

Location	ADSA 11/4/2008	ADSA 11/4/2008	RPD	W212 8/22/2008	W212 8/22/2008	RPD	W220 5/26/2008	W220 5/26/2008	RPD	W2236 11/20/2008	W2236 11/20/2008	RPD
Date												
Lab	CAS	CAS		CAS	CAS		CAS	CAS		CAS	CAS	
Dup				DUP			DUP			DUP		
<b>Dioxins</b>												
2,3,7,8-TCDD	<0.281	<0.471		<0.192	<0.203		<0.170	<0.114		<0.0623	<0.0645	
1,2,3,7,8-Dioxin penta	<0.296	<0.588		<0.371	<0.353		<0.157	<0.0965		<0.213	<0.0645	
1,2,3,7,8,9-Dioxin, hexa	<0.529	<0.234		<0.550	<0.587		<0.125	<0.163		<0.233	<0.254	
1,2,3,4,7,8-Dioxin, hexa	<0.592	<0.262		<0.616	<0.657		<0.132	<0.155		<0.242	<0.264	
1,2,3,6,7,8-Dioxin, hexa	<0.484	<0.213		<0.503	<0.537		<0.121	<0.150		<b>1.22 j</b>	<0.234	
1,2,3,4,6,7,8-Dioxin, hepta	<7.54	<7.50		<1.90	<2.31		<b>0.626 j</b>	<0.205		<b>27.1</b>	<3.13	
Dioxin octa	<69.1	<63.4		<15.1	<25.2		<3.18	<3.40		<233	<21.1	
<b>Furans</b>												
2,3,7,8-TCDF	<0.277	<0.464		<0.203	<0.200		<0.137	<0.107		<0.117	<0.156	
1,2,3,7,8-Dibenzofuran, penta	<0.291	<0.346		<0.206	<0.158		<0.110	<0.108		<0.0988	<0.0544	
2,3,4,7,8-Dibenzofuran, penta	<0.283	<0.338		<0.200	<0.155		<0.108	<0.104		<0.0978	<0.0544	
1,2,3,4,7,8-Dibenzofuran, hexa	<0.412	<0.194		<0.252	<0.249		<0.0630	<0.113		<0.131	<0.122	
1,2,3,6,7,8-Dibenzofuran, hexa	<0.384	<0.181		<0.236	<0.232		<0.0620	<0.115		<0.127	<0.117	
1,2,3,7,8,9-Dibenzofuran, hexa	<0.473	<0.222		<0.290	<0.286		<0.0710	<0.153		<0.165	<0.153	
2,3,4,6,7,8-Dibenzofuran, hexa	<0.435	<0.204		<0.266	<0.263		<0.0650	<0.128		<0.141	<0.131	
1,2,3,4,6,7,8-Dibenzofuran, hepta	<1.48	<1.47		<0.430	<0.299		<0.101	<0.238		<b>2.92 j EMPC</b>	<0.148	
1,2,3,4,7,8,9-Dibenzofuran, hepta	<0.521	<0.338		<0.567	<0.395		<0.125	<0.317		<0.296	<0.201	

**Table A-2**  
**Field Duplicate Sample Results**  
**St. Regis Paper Company Site**  
**Footnotes**

Detections are presented in **bold**.

DUP      Duplicate sample.

RPD      Relative Percent Difference

--      Not analyzed

\*      Estimated value, QA/QC criteria not met

EMPC      Estimated Maximum Percent Difference

a      Estimated value, calculated using some or all values that are estimates.

h      EPA recommended sample preservation, extraction or analysis holding time was exceeded.

j      Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

**Table A-3**  
**Laboratory Blank Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location Date Lab	Lab Blank 1/9/2008 CAS	Lab Blank 2/6/2008 CAS	Lab Blank 3/6/2008 CAS	Lab Blank 3/27/2008 CAS	Lab Blank 4/4/2008 CAS	Lab Blank 5/6/2008 CAS	Lab Blank 5/22/2008 CAS	Lab Blank 5/24/2008 CAS	Lab Blank 5/27/2008 CAS	Lab Blank 6/9/2008 CAS	Lab Blank 7/7/2008 CAS	Lab Blank 8/5/2008 CAS
<b>TPHs</b>												
<b>Diesel Range Organics</b>	<11	<b>19 j</b>	<15	<b>41 j</b>	<15	<b>16 j</b>	<15	<b>16 j</b>	<15	<15	<15	<b>88</b>
<b>Diesel Range Organics-Silica gel cleanup</b>	--	--	--	--	--	--	--	--	--	--	--	--
<b>Metals</b>												
<b>Arsenic</b>	<0.08	<0.07	<0.06	--	<b>0.14 j</b>	<0.07	--	--	<0.08	<0.06	<0.07	<0.07
<b>Chromium</b>	<b>0.07 j</b>	<b>0.03 j</b>	<b>0.05 j</b>	--	<b>0.11 j</b>	<0.03	--	--	<b>0.1 j</b>	<0.03	<b>0.04 j</b>	<0.03
<b>Copper</b>	<0.02	<0.02	<b>0.03 j</b>	--	<b>0.05 j</b>	<0.02	--	--	<0.02	<0.02	<b>0.05 j</b>	<0.02

Location Date Lab	Lab Blank 8/22/2008 CAS	Lab Blank 8/23/2008 CAS	Lab Blank 9/8/2008 CAS	Lab Blank 10/6/2008 CAS	Lab Blank 11/4/2008 CAS	Lab Blank 11/20/2008 CAS	Lab Blank 12/8/2008 CAS
<b>TPHs</b>							
<b>Diesel Range Organics</b>	<b>17 j</b>	<15	<b>24 j</b>	<15	--	--	--
<b>Diesel Range Organics-Silica gel cleanup</b>	--	--	--	--	<b>18 j</b>	<b>20 j</b>	<b>23 j</b>
<b>Metals</b>							
<b>Arsenic</b>	--	--	<0.07	<0.20	<0.20	--	<0.20
<b>Chromium</b>	--	--	<b>0.04 j</b>	<b>0.089 j</b>	<b>0.050 j</b>	--	<b>0.032 j</b>
<b>Copper</b>	--	--	<0.02	<0.03	<0.03	--	<b>0.05 j</b>

Detections are presented in **bold**.

-- Not analyzed

j Reported value is less than the stated quantitation limit  
and should be considered an estimated value.

**Table A-3**  
**Laboratory Blank Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location Date Lab	Lab Blank 1/9/2008 CAS	Lab Blank 2/6/2008 CAS	Lab Blank 3/6/2008 CAS	Lab Blank 3/27/2008 CAS	Lab Blank 4/4/2008 CAS	Lab Blank 5/6/2008 CAS	Lab Blank 5/19/2008 CAS	Lab Blank 5/19/2008 CAS	Lab Blank 5/22/2008 CAS	Lab Blank 5/22/2008 CAS	Lab Blank 5/24/2008 CAS	Lab Blank 5/27/2008 CAS	Lab Blank 5/27/2008 CAS	Lab Blank 5/27/2008 CAS	Lab Blank 5/29/2008 CAS
<b>SVOCs</b>															
2-Methylnaphthalene	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.24	<0.0023	<0.0023	<0.0023	<0.0023
Acenaphthene	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.29	<0.0044	<0.0044	<0.0044	<0.0044
Acenaphthylene	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.24	<0.0034	<0.0034	<0.0034	<0.0034
Anthracene	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<b>0.0052 j</b>	<0.0036	<0.62	<0.0036	<0.0036	<0.0036
Benzo(a)anthracene	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<b>0.0035 j</b>	<0.0026	<0.0026	<0.0026	<b>0.0033 j</b>	<0.60	<0.0026	<0.0026	<0.0026	<0.0026
Benzo(a)pyrene	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.66	<0.0043	<0.0043	<0.0043	<0.0043
Benzo(b)fluoranthene	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<b>0.0049 j</b>	<0.0023	<0.0023	<b>0.0027 j</b>	<0.59	<0.0023	<0.0023	<0.0023	<0.0023
Benzo(g,h,i)perylene	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<b>0.0092 j</b>	<0.82	<0.0029	<0.0029	<b>0.0032 j</b>	<0.0032 j
Benzo(k)fluoranthene	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<b>0.0029 j</b>	<0.83	<0.0025	<0.0025	<0.0025	<0.0025
Chrysene	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.79	<0.0034	<0.0034	<0.0034	<0.0034
Dibenzofuran	--	--	<0.0046	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.66	<0.0044	<0.0044	<0.0044	<0.0044
Fluorene	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.33	<0.0038	<0.0038	<0.0038	<0.0038
Indeno(1,2,3-cd)pyrene	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<b>0.0064 j</b>	<0.69	<0.0026	<0.0026	<0.0026	<b>0.0033 j</b>
Naphthalene	<0.0030	<b>0.0085 j</b>	<b>0.0034 j</b>	<b>0.0050 j</b>	<b>0.0032 j</b>	<0.0030	<0.0030	<0.0030	<b>0.013 j</b>	<0.0030	<0.37	<b>0.0039 j</b>	<b>0.0032 j</b>	<b>0.0035 j</b>	<0.0035 j
Pentachlorophenol	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	--	<0.80	<2.5	<0.080	<0.017	<0.080
Phenanthrene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.49	<0.0050	<0.0050	<0.0050	<0.0050
Pyrene	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.74	<0.0035	<0.0035	<0.0035	<0.0035

Detections are presented in **bold**.

-- Not analyzed.

j Reported value is less than the stated quantitation limit and should be considered an estimated value.

**Table A-3**  
**Laboratory Blank Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location Date Lab	Lab Blank 5/29/2008 CAS	Lab Blank 5/29/2008 CAS	Lab Blank 5/29/2008 CAS	Lab Blank 6/9/2008 CAS	Lab Blank 7/7/2008 CAS	Lab Blank 8/5/2008 CAS	Lab Blank 8/22/2008 CAS	Lab Blank 8/23/2008 CAS	Lab Blank 9/8/2008 CAS	Lab Blank 10/6/2008 CAS	Lab Blank 11/4/2008 CAS	Lab Blank 11/20/2008 CAS	Lab Blank 12/8/2008 CAS
<b>SVOCs</b>													
<b>2-Methylnaphthalene</b>	<0.24	<0.24	<0.0023	<0.0023	<b>0.0041 j</b>	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023
<b>Acenaphthene</b>	<0.29	<0.29	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044
<b>Acenaphthylene</b>	<0.24	<0.24	<0.0034	<0.0034	<b>0.0038 j</b>	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034
<b>Anthracene</b>	<0.62	<0.62	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036
<b>Benz(a)anthracene</b>	<0.60	<0.60	<0.0026	<0.0026	<b>0.0031 j</b>	<0.0026	<0.0026	<0.0026	<b>0.0040 j</b>	<0.0026	<0.0026	<0.0026	<b>0.0028 j</b>
<b>Benz(a)pyrene</b>	<0.66	<0.66	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043
<b>Benz(b)fluoranthene</b>	<0.59	<0.59	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<0.0023	<b>0.0025 j</b>	<0.0023	<0.0023
<b>Benz(g,h,i)perylene</b>	<0.82	<0.82	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<b>0.0051 j</b>	<0.0029	<b>0.0068 j</b>	<0.0029	<0.0029
<b>Benz(k)fluoranthene</b>	<0.83	<0.83	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
<b>Chrysene</b>	<0.79	<0.79	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034	<0.0034
<b>Dibenzofuran</b>	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>Fluoranthene</b>	<0.66	<0.66	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044
<b>Fluorene</b>	<0.33	<0.33	<0.0038	<0.0038	<b>0.0042 j</b>	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038
<b>Indeno(1,2,3-cd)pyrene</b>	<0.69	<0.69	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<b>0.0034 j</b>	<0.0026	<b>0.0035 j</b>	<0.0026	<0.0026
<b>Naphthalene</b>	<0.37	<0.37	<b>0.0032 j</b>	<0.0030	<b>0.0030 j</b>	<b>0.0086 j</b>	<b>0.011 j</b>	<b>0.011 j</b>	<b>0.012 j</b>	<0.0030	<0.0030	<0.0030	<0.0030
<b>Pentachlorophenol</b>	<2.5	<2.5	<0.017	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
<b>Phenanthrene</b>	<0.49	<0.49	<0.0050	<0.0050	<b>0.0055 j</b>	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
<b>Pyrene</b>	<0.74	<0.74	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035

Detections are presented in **bold**.

-- Not analyzed.

j Reported value is less than the stated quantitation limit and should be considered an estimated value.

**Table A-3**  
**Laboratory Blank Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location Date Lab	Lab Blank 5/26/2008 Legend	Lab Blank 5/28/2008 Legend
<b><u>SVOCs</u></b>		
1,6-Dinitropyrene	<0.0056	<0.0056
1,8-Dinitropyrene	<0.0044	<0.0044
1-Nitropyrene	<0.0011	<0.0011
2-Nitrofluorene	<0.00094	<0.00094
3-Methylcholanthrene	<0.00095	<0.00095
5-Methylchrysene	<0.00093	<0.00093
5-Nitroacenaphthene	<0.0018	<0.0018
6-Nitrochrysene	<0.0019	<0.0019
7,12-Dimethylbenz(a)anthracene	<0.002	<0.0020
7h-Dibenzo(c,g)carbazole	<0.00086	<0.00086
Benz(j)fluoranthene	<0.011	<0.011
Dibenz(a,h)acridine	<0.0029	<0.0029
Dibenz(a,j)acridine	<0.0041	<0.0041
Dibenzo(a,e)pyrene	<0.00074	<0.00074
Dibenzo(a,h)pyrene	<0.003	<0.0030
Dibenzo(a,i)pyrene	<0.0015	<0.0015
Dibenzo(a,l)pyrene	<0.0025	<0.0025

**Table A-3**  
**Laboratory Blank Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in ug/L)**

Location Date Lab	Lab Blank 1/9/2008 CAS	Lab Blank 1/9/2008 CAS	Lab Blank 2/6/2008 CAS	Lab Blank 2/18/2008 CAS	Lab Blank 3/6/2008 CAS	Lab Blank 3/27/2008 CAS	Lab Blank 3/27/2008 CAS	Lab Blank 4/4/2008 CAS	Lab Blank 5/6/2008 CAS
<b>VOCs</b>									
<b>Benzene</b>									
Benzene	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.045
Ethyl benzene	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.042
Toluene	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.048
Xylene m & p	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.078
Xylene o-	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.037

Location Date Lab	Lab Blank 5/22/2008 CAS	Lab Blank 5/22/2008 CAS	Lab Blank 5/24/2008 CAS	Lab Blank 5/24/2008 CAS	Lab Blank 5/27/2008 CAS	Lab Blank 6/9/2008 CAS	Lab Blank 7/7/2008 CAS	Lab Blank 8/5/2008 CAS	Lab Blank 8/22/2008 CAS
<b>VOCs</b>									
<b>Benzene</b>									
Benzene	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045
Ethyl benzene	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042
Toluene	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048
Xylene m & p	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078
Xylene o-	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037

Location Date Lab	Lab Blank 8/22/2008 CAS	Lab Blank 8/23/2008 CAS	Lab Blank 9/8/2008 CAS	Lab Blank 10/6/2008 CAS	Lab Blank 11/4/2008 CAS	Lab Blank 11/20/2008 CAS	Lab Blank 11/20/2008 CAS	Lab Blank 11/20/2008 CAS	Lab Blank 12/8/2008 CAS
<b>VOCs</b>									
<b>Benzene</b>									
Benzene	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045
Ethyl benzene	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042
Toluene	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<b>0.060 j</b>
Xylene m & p	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078
Xylene o-	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037

Detections are presented in **bold**.

j Reported value is less than the stated quantitation limit  
and should be considered an estimated value.

**Table A-3**  
**Laboratory Blank Sample Results**  
**St. Regis Paper Company Site**  
**(concentrations in pg/L)**

Location Date Lab	Lab Blank 2/6/2008 CAS	Lab Blank 3/27/2008 CAS	Lab Blank 3/27/2008 CAS	Lab Blank 5/6/2008 CAS	Lab Blank 5/24/2008 CAS	Lab Blank 5/24/2008 CAS	Lab Blank 5/27/2008 CAS	Lab Blank 5/29/2008 CAS	Lab Blank 8/5/2008 CAS	Lab Blank 8/22/2008 CAS	Lab Blank 8/23/2008 CAS	Lab Blank 11/4/2008 CAS	Lab Blank 11/4/2008 CAS	Lab Blank 11/20/2008 CAS	
<b>Dioxins</b>															
<b>2,3,7,8-TCDD</b>	<1.06	<0.703	<0.484	<0.681	<0.726	<0.0870	<0.135	<0.135	<0.135	<0.491	<0.321	<0.157	<0.404	<0.270	<0.388
<b>1,2,3,7,8-Dioxin penta</b>	<0.628	<0.305	<0.415	<0.459	<0.745	<0.157	<0.185	<0.185	<0.185	<0.651	<0.639	<0.177	<0.539	<0.728	<0.678
<b>1,2,3,4,7,8-Dioxin, hexa</b>	<0.823	<0.308	<0.477	<0.465	<0.674	<0.179	<0.176	<0.176	<0.176	<0.490	<1.08	<0.177	<b>1.04 j EMPC</b>	<0.748	<0.892
<b>1,2,3,6,7,8-Dioxin, hexa</b>	<0.798	<0.305	<0.473	<0.412	<0.621	<0.174	<0.171	<0.171	<0.171	<0.401	<0.879	<0.147	<b>1.04 j EMPC</b>	<0.663	<0.730
<b>1,2,3,7,8,9-Dioxin, hexa</b>	<0.862	<0.309	<0.479	<0.418	<0.641	<0.188	<0.184	<0.184	<0.184	<0.438	<0.961	<0.166	<b>1.33 j EMPC</b>	<0.721	<0.798
<b>1,2,3,4,6,7,8-Dioxin, hepta</b>	<b>1.98 j EMPC</b>	<b>1.97 j EMPC</b>	<0.905	<b>10.6 j</b>	<1.34	<b>0.755 EMPC</b>	<b>0.454 EMPC</b>	<b>0.454 EMPC</b>	<b>0.454 EMPC</b>	<b>8.46 j</b>	<b>2.07 j</b>	<0.307	<b>3.17 j EMPC</b>	<0.237	<b>4.40 j</b>
<b>Dioxin octa</b>	<b>5.94 j</b>	<b>10.5 j</b>	<b>6.64 j</b>	<b>61.9</b>	<b>8.96 j</b>	<b>3.23 j</b>	<b>1.88 EMPC</b>	<b>1.88 EMPC</b>	<b>1.88 EMPC</b>	<b>39.4 j</b>	<b>14.1 j</b>	<b>2.80 j</b>	<b>21.2 j</b>	<b>6.59 j</b>	<b>32.3 j</b>
<b>Furans</b>															
<b>2,3,7,8-TCDF</b>	<1.20	<0.344	<0.395	<0.691	<0.535	<0.112	<0.170	<0.170	<0.170	<0.393	<0.289	<0.262	<0.439	<0.345	<0.406
<b>1,2,3,7,8-Dibenzofuran, penta</b>	<0.492	<0.193	<0.383	<0.541	<0.390	<0.181	<0.169	<0.169	<0.169	<0.447	<0.334	<0.158	<0.231	<0.354	<0.388
<b>2,3,4,7,8-Dibenzofuran, penta</b>	<0.475	<0.190	<0.376	<0.526	<0.383	<0.174	<0.163	<0.163	<0.163	<0.436	<0.326	<0.154	<b>1.16 j</b>	<0.351	<0.378
<b>1,2,3,4,7,8-Dibenzofuran, hexa</b>	<0.548	<0.254	<0.363	<1.14	<0.458	<0.179	<0.112	<0.112	<0.112	<0.510	<0.377	<0.182	<b>0.897 j</b>	<0.407	<0.321
<b>1,2,3,6,7,8-Dibenzofuran, hexa</b>	<0.559	<0.265	<0.379	<1.10	<0.453	<0.183	<0.114	<0.114	<0.114	<0.476	<0.351	<0.162	<b>0.739 j EMPC</b>	<0.391	<0.300
<b>1,2,3,7,8,9-Dibenzofuran, hexa</b>	<0.741	<0.327	<0.469	<1.42	<0.521	<0.243	<0.152	<0.152	<0.152	<0.586	<0.433	<0.249	<b>1.02 j EMPC</b>	<0.509	<0.369
<b>2,3,4,6,7,8-Dibenzofuran, hexa</b>	<0.619	<0.280	<0.401	<1.23	<0.474	<0.203	<0.127	<0.127	<0.127	<0.539	<0.398	<0.188	<b>1.24 j</b>	<0.436	<0.339
<b>1,2,3,4,6,7,8-Dibenzofuran, hepta</b>	<0.559	<b>0.533 j</b>	<0.501	<0.367	<0.465	<b>0.880 EMPC</b>	<0.251	<0.251	<0.251	<b>2.73 j</b>	<0.441	<0.204	<b>0.840 j EMPC</b>	<0.670	<0.481
<b>1,2,3,4,7,8,9-Dibenzofuran, hepta</b>	<0.744	<0.482	<0.656	<0.482	<0.574	<0.303	<0.334	<0.334	<0.334	<0.566	<0.583	<0.310	<b>0.918 j EMPC</b>	<0.913	<0.635
<b>Dibenzofuran octa</b>	<1.86	<b>1.46 j</b>	<1.81	<b>10.8 j</b>	<1.49	<0.513	<0.367	<0.367	<0.367	<b>10.6 j</b>	<b>1.81 j</b>	<0.216	<b>3.62 j</b>	<0.397	<b>4.39 j</b>

Detections are presented in **bold**.

j Reported value is less than the stated quantitation limit  
and should be considered an estimated value.

EMPC Estimated Maximum Possible Concentration.

***Appendix B***

***Laboratory Analytical Reports  
(On Enclosed CD)***

## ***Appendix C***

### ***Containment Vault Inspection Forms***

## CASS LAKE CONTAINMENT VAULT

INSPECTION FORM

Instructions: Mark the correct response with an "X" after inspecting each component of the vault. Any corrective action required by this inspection will be implemented as stated in the Revised Post-Closure Submittal, April 1992. This inspection form was developed to meet the requirements of MN Rules 7045.0452, Subp. 5, Item B.

I. Run-on Control System	<u>Yes</u>	<u>No</u>
1. Is there debris in the run-on control system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Is there debris blocking the culvert?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Is there a significant amount of standing water in the run-on control system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Are there any signs of erosion to the run-on control system? (depressions, gullies, change in contour)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Are there any areas that lack adequate vegetation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Is there any other deficiency of the run-on control system? (Describe in Section VI)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
II. Run-off Control System	<u>Yes</u>	<u>No</u>
1. Is there debris on the side slopes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Are there any signs of erosion of the side slopes? (Depressions, gullies, change in contour)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Are there any areas that lack adequate vegetation on the side slopes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Is there debris on top of the vault?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Are there any signs of erosion to the top of the vault? (Depressions, gullies, change in contour)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Are there any areas that lack adequate vegetation on top of the vault?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Is there any evidence of uneven settling of the cap? (Depressions, standing water)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is there debris in the storm sewer system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9. Is there any other deficiency of the run-off control system? (Describe in Section VI)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
III. Leachate Collection Manhole (LCM) and Leak Detection Manhole (LDM)	<u>Yes</u>	<u>No</u>
1. Is there leachate in the LCM?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Depth to leachate: <u>31.75</u>		
2. Is there leachate in the LDM?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Depth to leachate: <u>32.15</u>		

Yes      No

3. Is the leachate evaporation system not functional? NA    
4. Is the LCM or LDM not covered?    
5. Is there any damage to the LCM or LDM?  
(Describe in Section VI)

**IV. Benchmarks and Wells**

1. Has any benchmark or protective post been damaged?    
2. Has any well or protective post been damaged?    
3. Is any well not locked?    
4. Is there any other deficiency noted?  
(Describe in Section VI)

**V. Security System**

1. Is there any damage to the chain link fence?    
2. Is the gate unlocked when it is not attended?    
3. Are there any other deficiencies noted?  
(Describe in Section VI)

**VI. Describe any other deficiencies or damage to any component of the vault. (Add additional pages, if necessary)**

**VII. Describe any corrective action required as the result of this inspection.**  
Corrective action is required for each "Yes" response, except Section III,  
questions 1 & 2. (Add additional pages, if necessary)

Inspected by: Jamie Eidsmoe Inspection Date: 5-6-08

(Please Print)

JAMIE Eidsmoe

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## CASS LAKE CONTAINMENT VAULT

INSPECTION FORM

Instructions: Mark the correct response with an "X" after inspecting each component of the vault. Any corrective action required by this inspection will be implemented as stated in the Revised Post-Closure Submittal, April 1992. This inspection form was developed to meet the requirements of MN Rules 7045.0452, Subp. 5, Item B.

		Yes	No
<b>I. Run-on Control System</b>			
1.	Is there debris in the run-on control system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.	Is there debris blocking the culvert?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.	Is there a significant amount of standing water in the run-on control system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.	Are there any signs of erosion to the run-on control system? (depressions, gullies, change in contour)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5.	Are there any areas that lack adequate vegetation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6.	Is there any other deficiency of the run-on control system? (Describe in Section VI)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>II. Run-off Control System</b>			
1.	Is there debris on the side slopes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.	Are there any signs of erosion of the side slopes? (Depressions, gullies, change in contour)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.	Are there any areas that lack adequate vegetation on the side slopes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.	Is there debris on top of the vault?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5.	Are there any signs of erosion to the top of the vault? (Depressions, gullies, change in contour)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6.	Are there any areas that lack adequate vegetation on top of the vault?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7.	Is there any evidence of uneven settling of the cap? (Depressions, standing water)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8.	Is there debris in the storm sewer system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9.	Is there any other deficiency of the run-off control system? (Describe in Section VI)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>III. Leachate Collection Manhole (LCM) and Leak Detection Manhole (LDM)</b>			
1.	Is there leachate in the LCM?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Depth to leachate: <u>31.47</u>			
2.	Is there leachate in the LDM?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Depth to leachate: <u>32.33</u>			

	<u>Yes</u>	<u>No</u>
3. Is the leachate evaporation system <u>not</u> functional? <i>NA</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Is the LCM or LDM <u>not</u> covered?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Is there any damage to the LCM or LDM? (Describe in Section VI)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>IV. Benchmarks and Wells</b>		
1. Has any benchmark or protective post been damaged?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Has any well or protective post been damaged?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Is any well <u>not</u> locked?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Is there any other deficiency noted? (Describe in Section VI)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>V. Security System</b>		
1. Is there any damage to the chain link fence?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Is the gate unlocked when it is not attended?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Are there any other deficiencies noted? (Describe in Section VI)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>VI. Describe any other deficiencies or damage to any component of the vault. (Add additional pages, if necessary)</b>		

**VII. Describe any corrective action required as the result of this inspection.**  
Corrective action is required for each "Yes" response, except Section III, questions 1 & 2. (Add additional pages, if necessary)

Inspected by: JAMIE Eidsmoe Inspection Date 11-7-08  
(Please Print)

Signature: Jamie Eidsmoe Date: 11-7-08

## ***Appendix D***

### ***Water Quality Trend Analysis***

## Water Quality Data Trend Analysis

Appendix D contains graphs of water quality over time for each of the site wells. There are two graphs for each well, one for pentachlorophenol and one for naphthalene data. These chemicals were selected since they are they have the highest mobility of the chemicals of potential concern at the St. Regis Paper Company Site. Pentachlorophenol is regulated as a carcinogen with a drinking water standard of 1 µg/L. Other carcinogenic chemicals of potential concern are not detected in samples from monitoring wells located near the channel or Fox Creek as their mobility is significantly less than pentachlorophenol. Naphthalene is present at most monitoring locations and is typically present at the highest concentration of the PAH compounds. Therefore, it was selected as an indicator of the trends that may be associated with the other PAH compounds.

The sample results are shown using two types of markers. A closed marker indicates that the parameter was identified at the specified concentration. An open marker indicates that the parameter was not identified at the method quantitation limits.

Statistical methods were used, where appropriate, to evaluate the water quality trends. Statistical methods described in “Methods for Evaluating the Attainment of Cleanup Standards, Volume 2: Groundwater”, U.S. EPA 1992, were used to predict when monitoring locations are expected to attain the specified limit. The linear regression methodology and worksheets (i.e., 1R and 2R) described in Section 6.0 of the EPA guidance (EPA, 1992) were utilized to statistically analyze the data and make an appropriate prediction. The concentration data was transformed using base-10 logarithm before regression calculations were performed. The “Goodness of Fit” for the linear regression methodology was evaluated by calculating the Coefficient of Determination [ $R^2$ ]. For this appendix, a  $R^2$  value  $\geq 0.6$  was considered reasonable for predicting future observations (consistent with EPA Guidance). For these graphs, the linear regression line is plotted along with curves that represent the upper and lower 95% confidence interval based on the linear regression. Regressions are not plotted if the  $R^2$  is  $< 0.6$  or a significant portion of the data set is below the respective quantitation limit.

Groundwater limits are also included on the graphs and represent the current drinking water criteria as recommended in the Third Five-Year Report. The basis for these limits is summarized below:

<b>Groundwater</b>	<b>Limit</b>	<b>Basis</b>
Pentachlorophenol	1 µg/L	Current drinking water criteria (Maximum Contaminant Level {MCL})
	5.5 µg/L	Minnesota Class 2B Surface Water Standard (Assuming pH = 7.0)
Naphthalene	300 µg/L	Current drinking water criteria (Minnesota Health Risk Level {MN HRL})
	81 µg/L	Minnesota Class 2B Surface Water Standard

The following table provides a summary of this trend analysis:

<b>Monitoring Well ID</b>	<b>PCP</b>		<b>Naphthalene</b>		<b>Comments</b>
	<b>&lt; DWC</b>	<b>&lt; SWS</b>	<b>&lt; DWC</b>	<b>&lt; SWS</b>	
<b>OU1 – Treating Facility Area</b>					
W104	No	No	Yes	Yes	Variable concentrations of PCP and naphthalene no consistent trend identified.
W105R	No	No	Yes	Yes	PCP detected in replacement well. Additional data needed to evaluate trends.
W112	Yes	Yes	Yes	Yes	PCP below detection limit. Trace levels of naphthalene – no trend identified.
W114	Yes	Yes	Yes	Yes	PCP below detection limit. Trace levels of naphthalene – no trend identified.
W115	Yes	Yes	Yes	Yes	PCP below detection limit. Trace levels of naphthalene – no trend identified.
W205	Yes	Yes	Yes	Yes	PCP below detection limit. Trace levels of naphthalene – no trend identified.
W209	Yes	Yes	Yes	Yes	PCP below detection limit. Trace levels of naphthalene – no trend identified.
W212	No	No	Yes	Yes	PCP and naphthalene concentrations demonstrate a continuing decreasing trend.
W213	Yes	Yes	Yes	No	PCP concentrations have been reduced to below detection limit. Naphthalene concentrations show a decrease in the last 2 years.
W215	Yes	Yes	Yes	Yes	PCP and naphthalene concentrations demonstrate a continuing decreasing trend. PCP was not detected for the first time in 2008, which defies the linear regression trend. Naphthalene below detection limit.
W217	Yes	Yes	Yes	Yes	PCP below detection limit. Trace levels of naphthalene – no trend identified.
W218	No	No	Yes	Yes	Variable concentrations of PCP and naphthalene. No consistent trend identified.

Monitoring Well ID	PCP		Naphthalene		Comments
	< DWC	< SWS	< DWC	< SWS	
W219	Yes	Yes	Yes	Yes	PCP below detection limit. Naphthalene concentrations demonstrate a continuing decreasing trend.
W220	No	No	Yes	Yes	PCP and naphthalene concentrations demonstrate a continuing decreasing trend except for slight increases in PCP the past 2 years.
W221	Yes	Yes	Yes	Yes	PCP and naphthalene concentrations below analytical detection limits.
MW3	Yes	Yes	Yes	Yes	
W302	Yes	Yes	Yes	Yes	
W306	Yes	Yes	Yes	Yes	
W401	No	No	Yes	Yes	Variable concentration of PCP (> 1000 µg/L) – no trend identified. Naphthalene concentrations are below detection limit.
W402	No	No	Yes	Yes	Variable concentration of PCP (> 1000 µg/L) – no trend identified. Naphthalene concentrations are below detection limit.
W403	No	No	Yes	Yes	Variable concentration of PCP (> 100 µg/L) – no trend identified. Naphthalene concentrations are below detection limit.
W405	No	No	No	No	Variable concentration of PCP and naphthalene.
W406	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Naphthalene concentration is less than 1 µg/L
W407	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Naphthalene concentration is less than 0.1 µg/L.
W408	No	No	Yes	Yes	PCP and naphthalene concentrations demonstrate a continuing decreasing trend.
W409	No	No	Yes	No	PCP concentrations demonstrate a continuing decreasing trend. Variable naphthalene concentrations.
W410	No	No	Yes	Yes	Variable concentrations of PCP and naphthalene.
W411	No	No	Yes	Yes	PCP concentrations demonstrate a continuing decreasing trend despite a slight increase in 2008. Naphthalene concentration is below the detection limit.

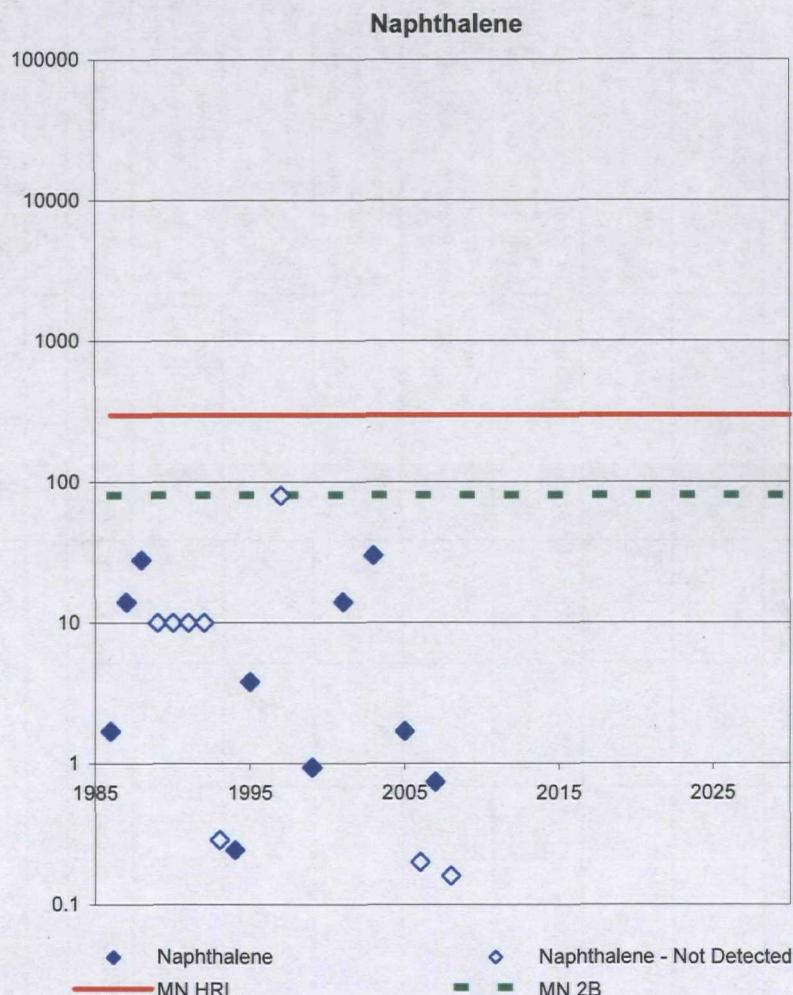
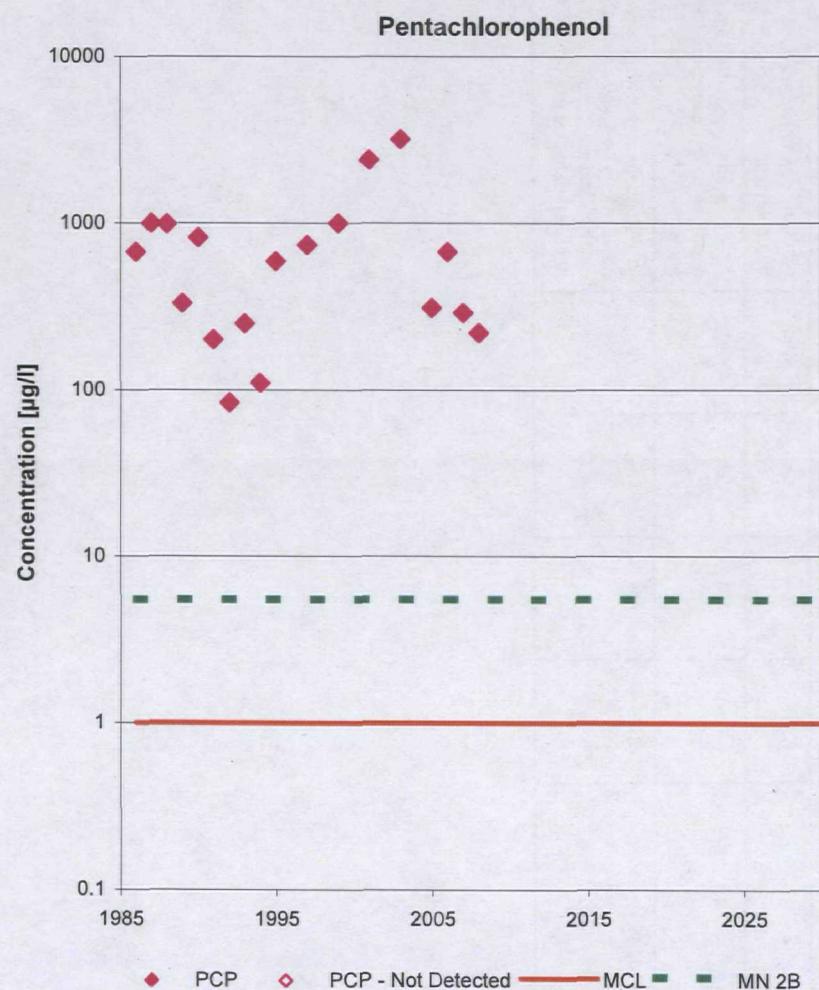
#### OU2 – Containment Vault Area

W124	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentrations periodically detected. No trend of increasing concentrations
W125	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentrations periodically detected. No trend of increasing concentrations
W126	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentrations periodically detected. No trend of increasing concentrations

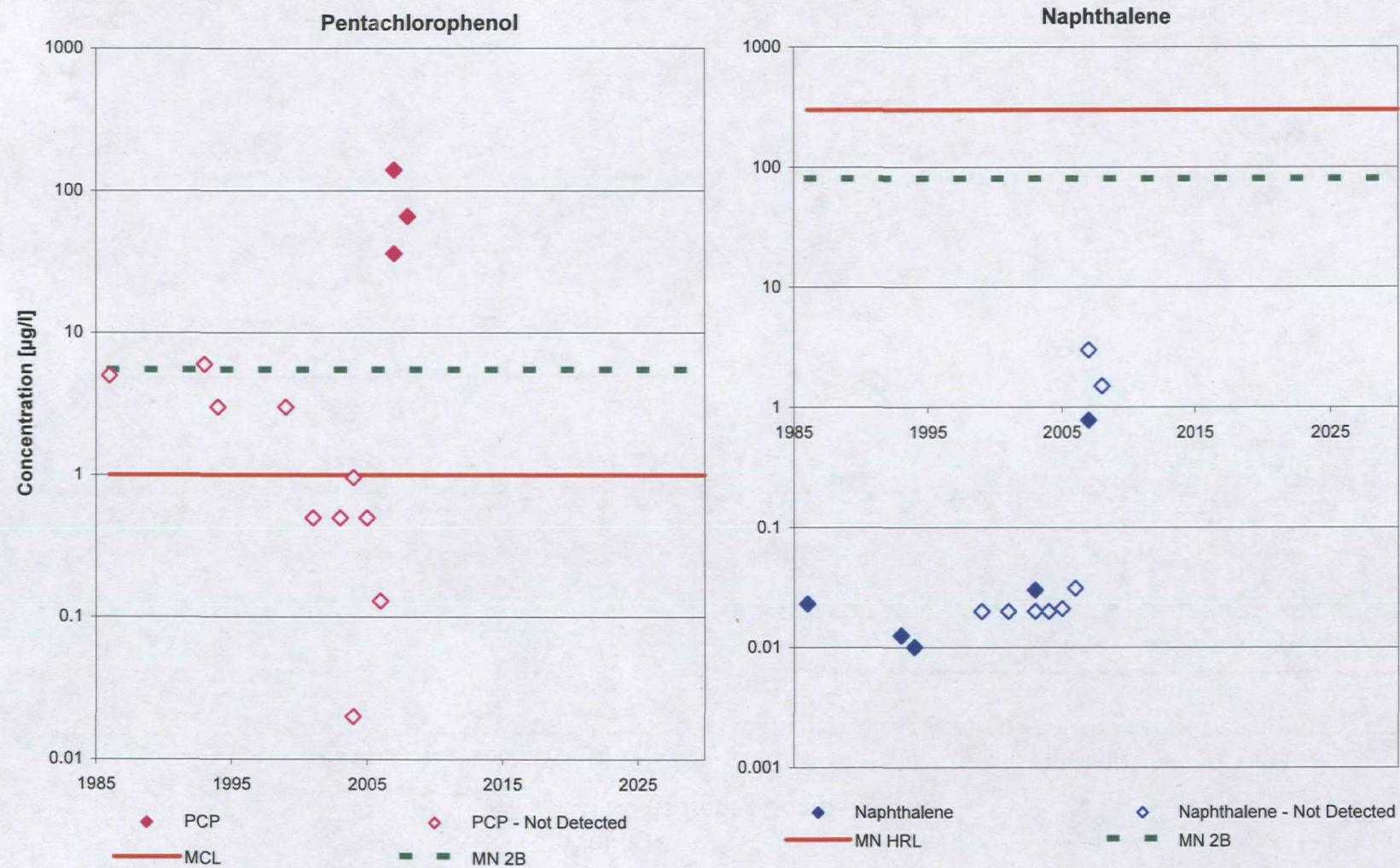
Monitoring Well ID	PCP		Naphthalene		Comments
	< DWC	< SWS	< DWC	< SWS	
W127	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Return to undetected status reinforces the idea of contamination in the 2007 sample detected above the DWC. Trace naphthalene concentrations periodically detected. No trend of increasing concentrations
W128	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentrations periodically detected. No trend of increasing concentrations
W129	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentrations periodically detected. No trend of increasing concentrations
W130	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentrations periodically detected. No trend of increasing concentrations
<b>OU3 – City Dump Area</b>					
W2106	No	No	Yes	No	Variable PCP and naphthalene concentrations – no trend identified.
W2127	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentrations that are below drinking water criteria and surface water standards. No trend identified
W2128	No	Yes	Yes	Yes	PCP concentrations demonstrate a continuing, decreasing trend. Variable naphthalene concentrations.
W2129	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentrations periodically detected. No trend of increasing concentrations
W2134	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentrations infrequently detected.
W2135	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentrations infrequently detected. No trend of increasing concentration identified
W2228	No	Yes	Yes	Yes	PCP and naphthalene not detected in first year of sampling. PCP low detection limit above DWC.
W2233	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentrations periodically detected. No trend of increasing concentrations identified
W2234	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentrations periodically detected. No trend of increasing concentrations identified
W2236	Yes	Yes	Yes	Yes	PCP and naphthalene concentrations are below detection limit except for one 2007 sample where both were detected. No trend of increasing concentrations identified
W2238	No	Yes	Yes	No	Both PCP and naphthalene detected in first year of monitoring.
W2301	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentration routinely detected in samples from this upgradient well.
W2325	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentration routinely detected in samples from this upgradient well.

Monitoring Well ID	PCP		Naphthalene		Comments
	< DWC	< SWS	< DWC	< SWS	
W2326	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentration routinely detected in samples from this upgradient well.
W2329	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentrations periodically detected. No trend of increasing concentrations
W2333	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentrations have been detected. No trend of increasing concentrations identified.
W2335	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentrations have been detected. No trend of increasing concentrations identified.
W2336	Yes	Yes	Yes	Yes	PCP concentration is below detection limit. Trace naphthalene concentrations have been detected. No trend of increasing concentrations identified.
W2401	No	No	No	No	PCP concentrations have leveled off, stopping an initial decreasing trend. Variable naphthalene concentrations – no trend identified.
W2402	No	No	Yes	Yes	Variable PCP concentrations over time - no trend identified. Naphthalene concentrations have been reduced to below the detection limit.
W2403	No	No	No	No	Variable PCP and naphthalene concentrations over time - no trends identified.
<b>Fish Hatchery Wells</b>					
Fish 1	Yes	Yes	Yes	Yes	PCP and naphthalene concentrations are below detection limit.
Fish 2	Yes	Yes	Yes	Yes	PCP and naphthalene concentrations are below detection limit.
Fish 3	Yes	Yes	Yes	Yes	PCP concentrations are below detection limit. Trace naphthalene concentration detected in one of three samples
Fish 4	Yes	Yes	Yes	Yes	PCP concentrations are below detection limit. Trace naphthalene concentrations are below drinking water criterion and surface water standard. Naphthalene has not been detected in samples from this well since 2000.

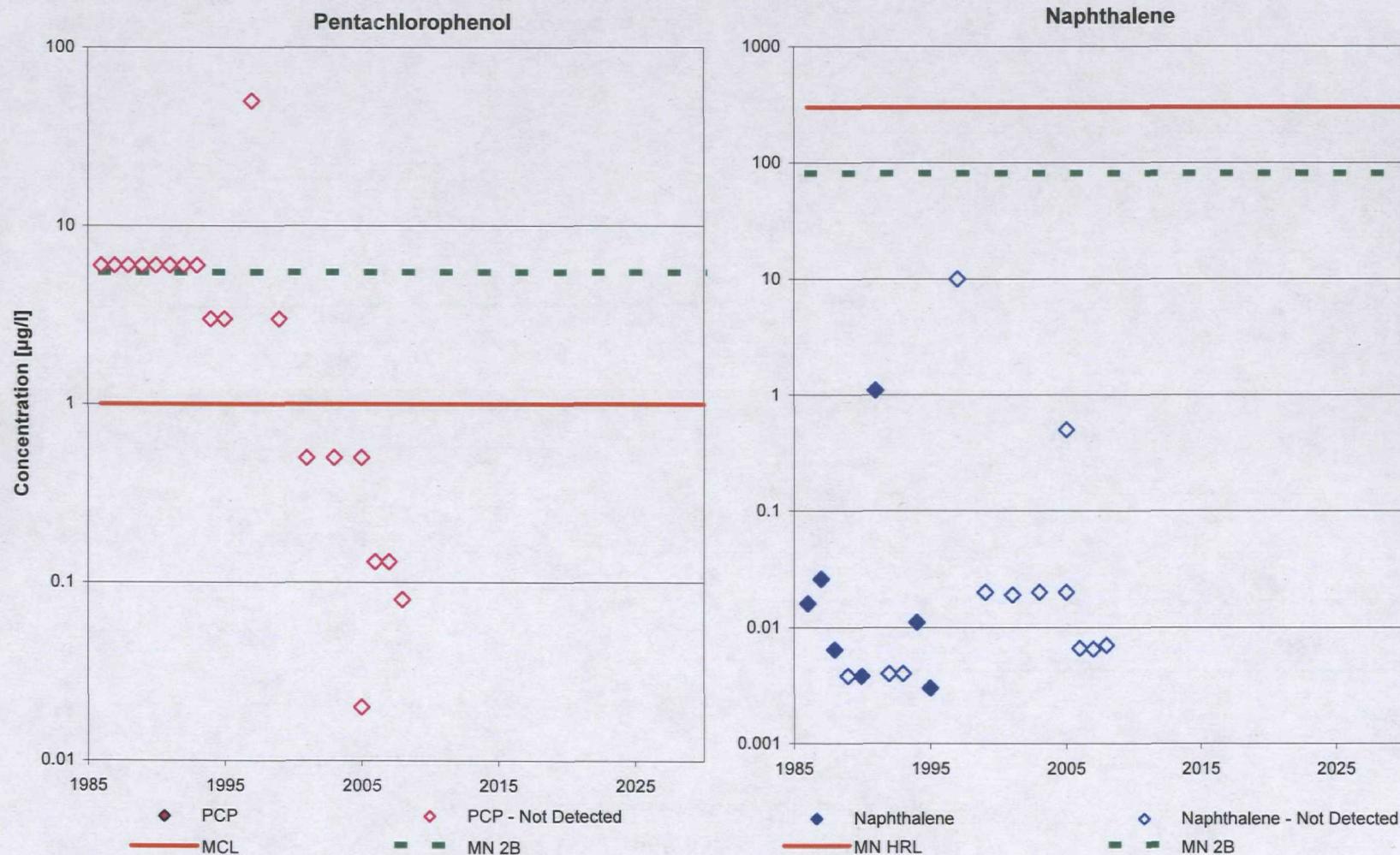
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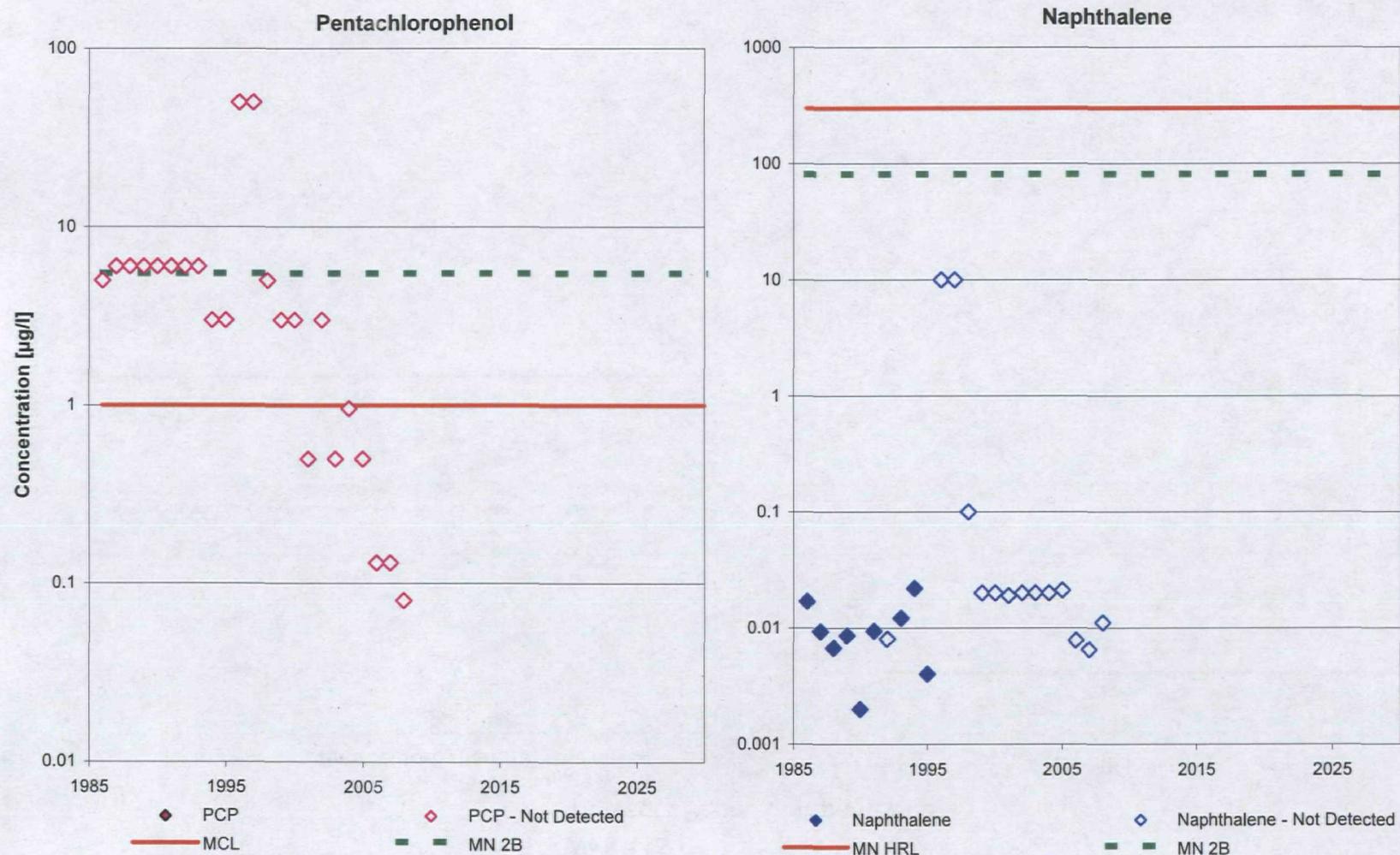
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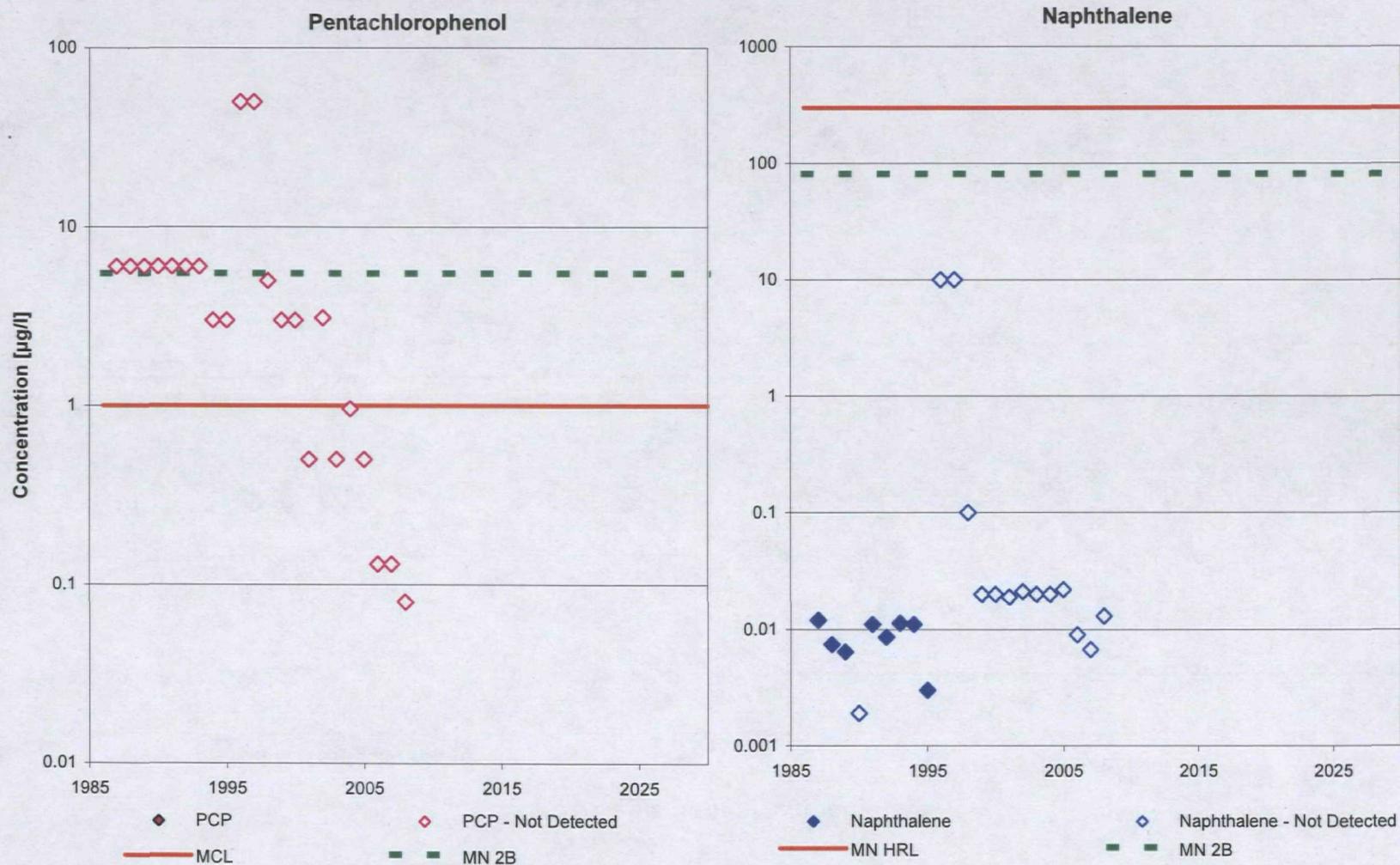
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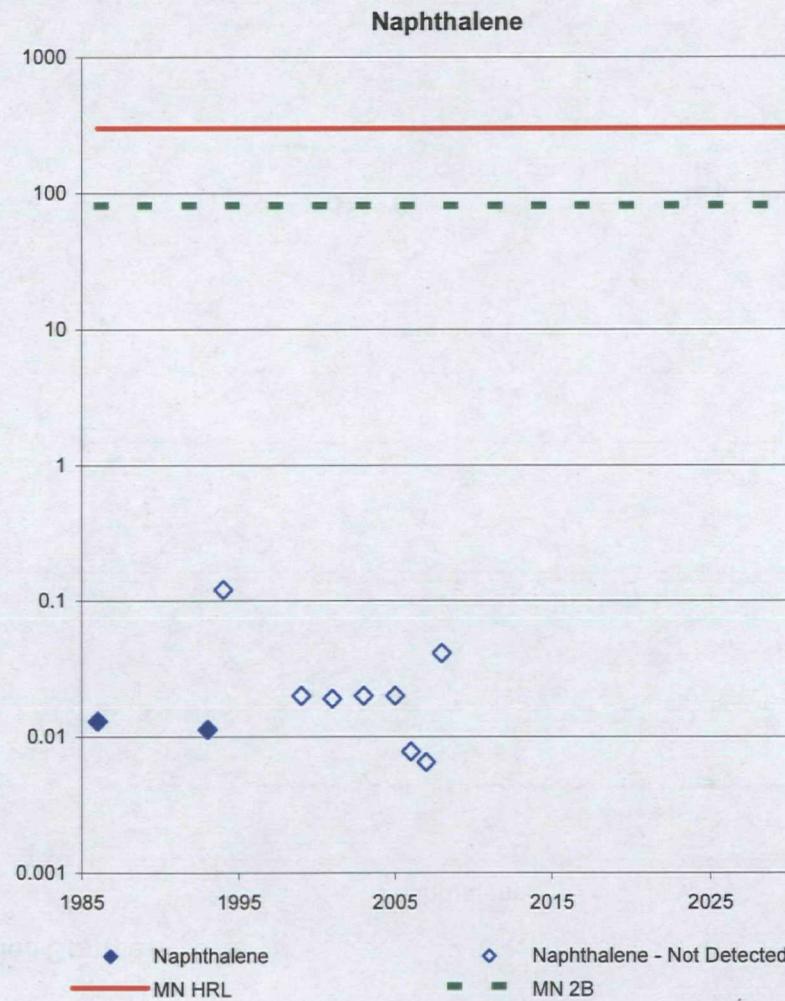
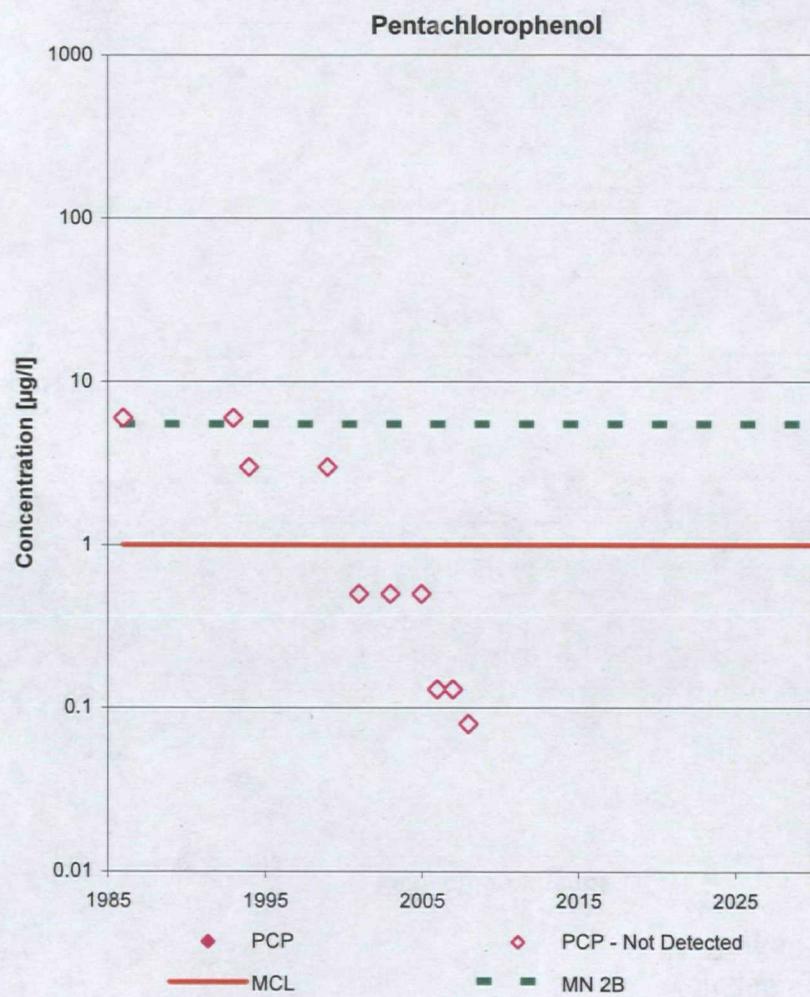
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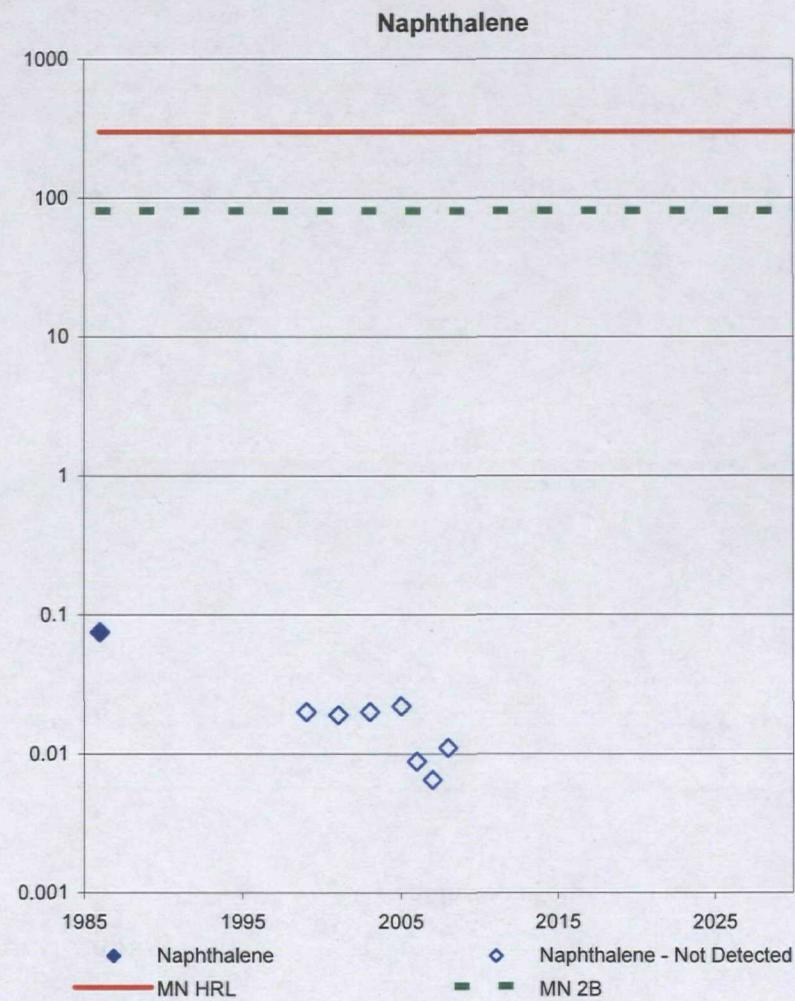
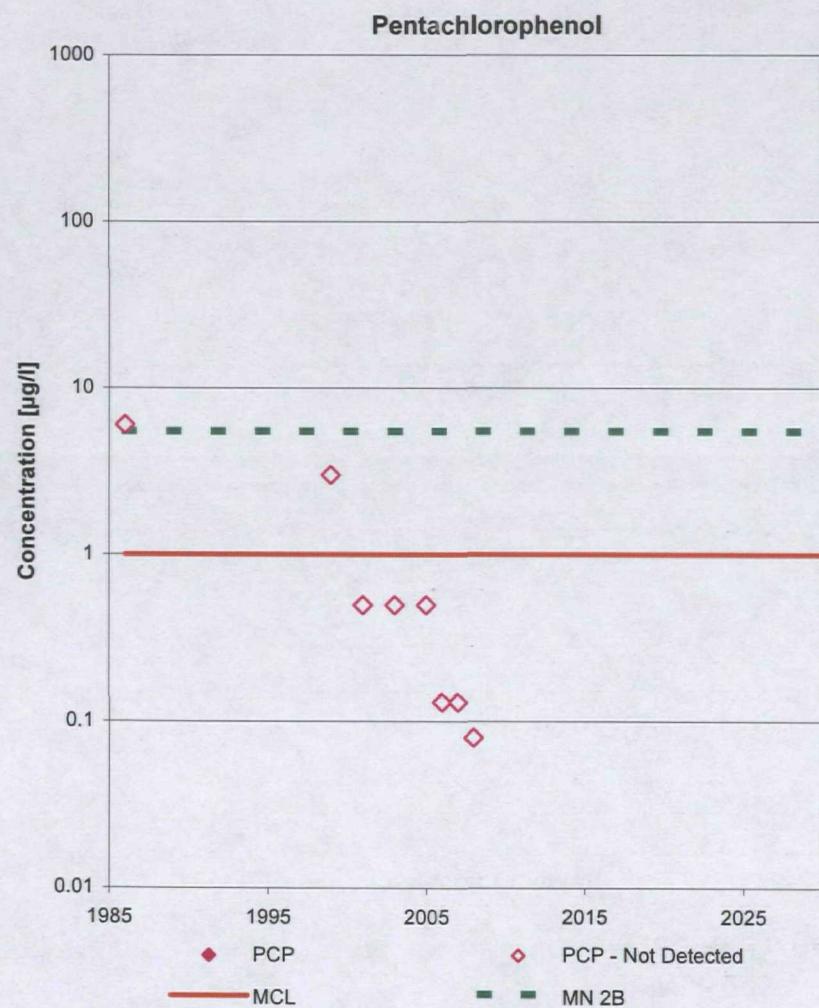
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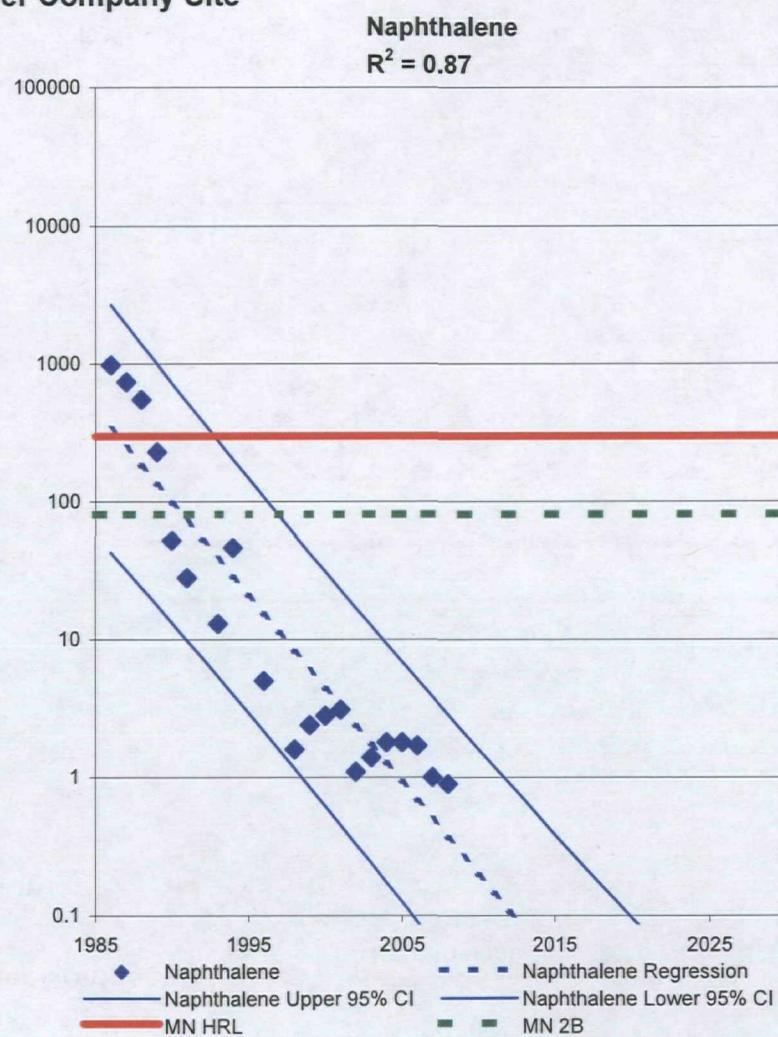
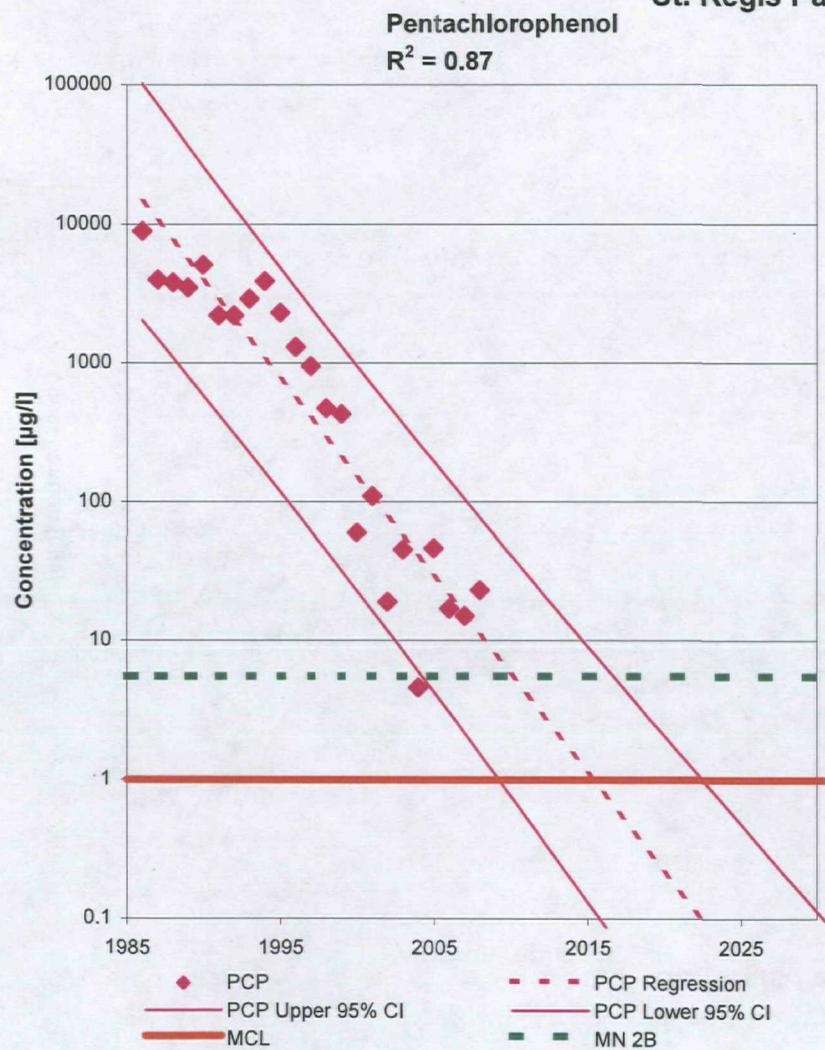
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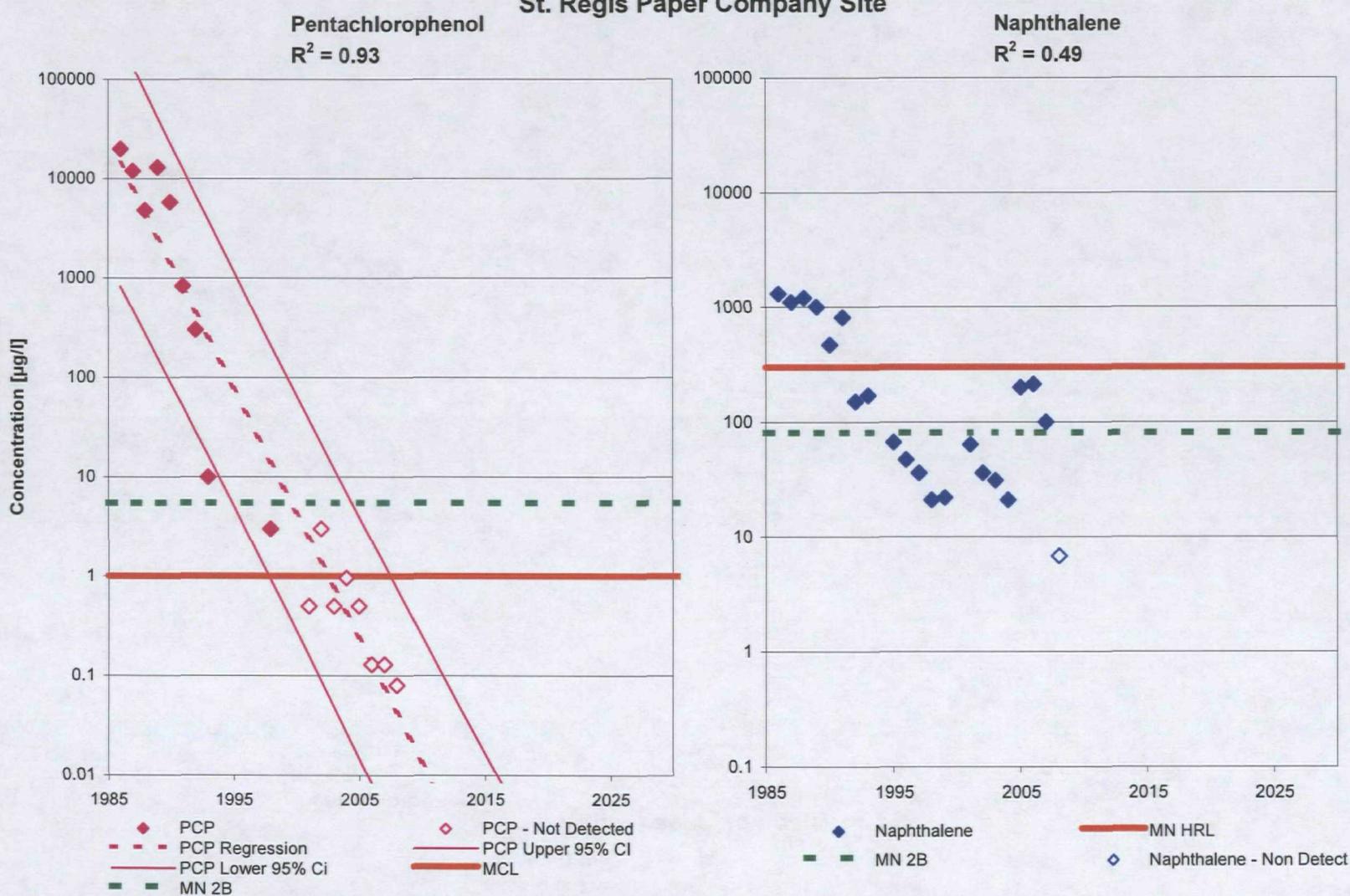
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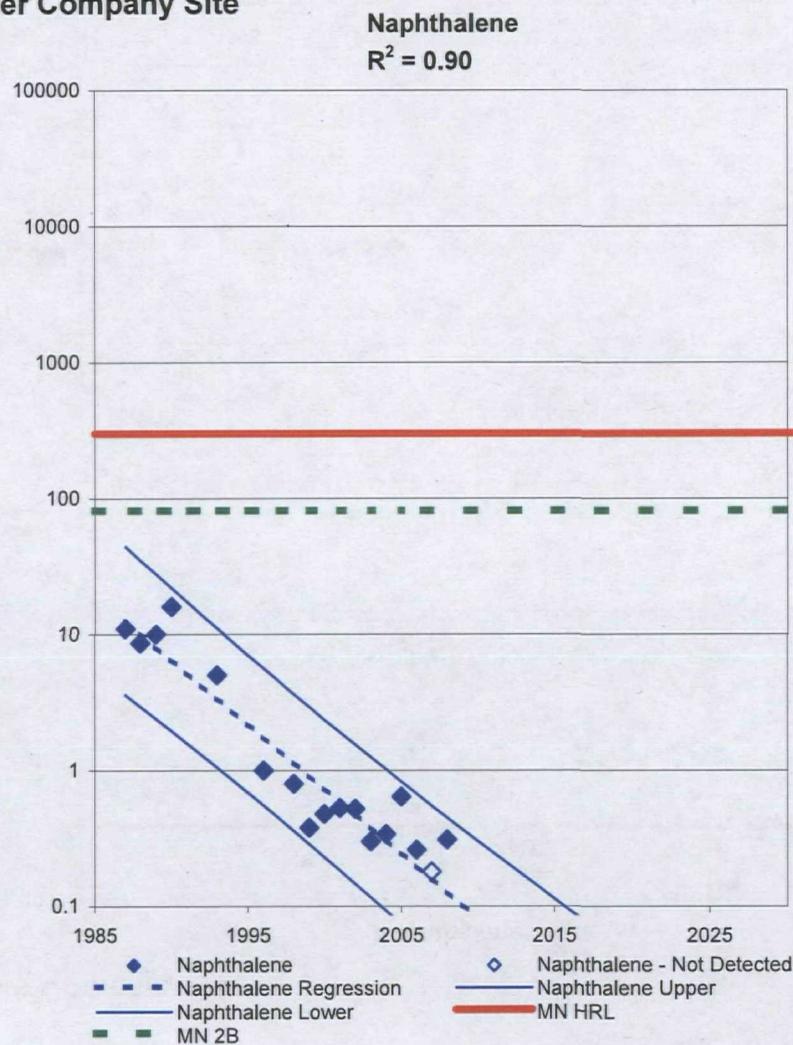
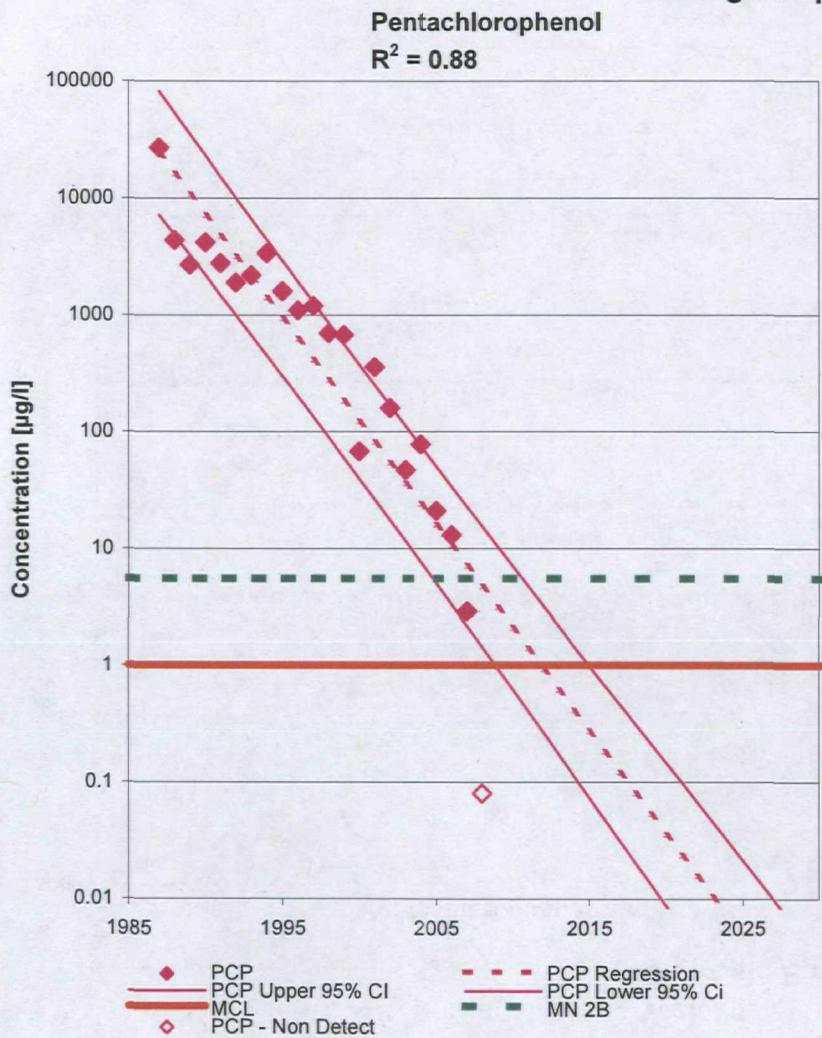
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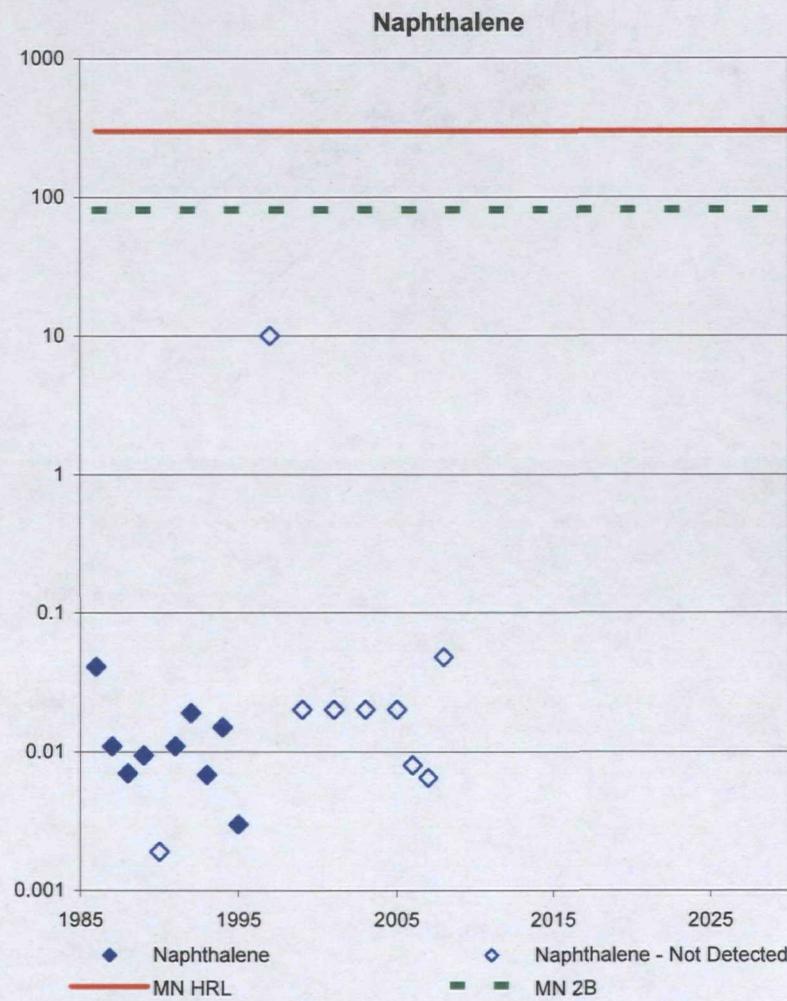
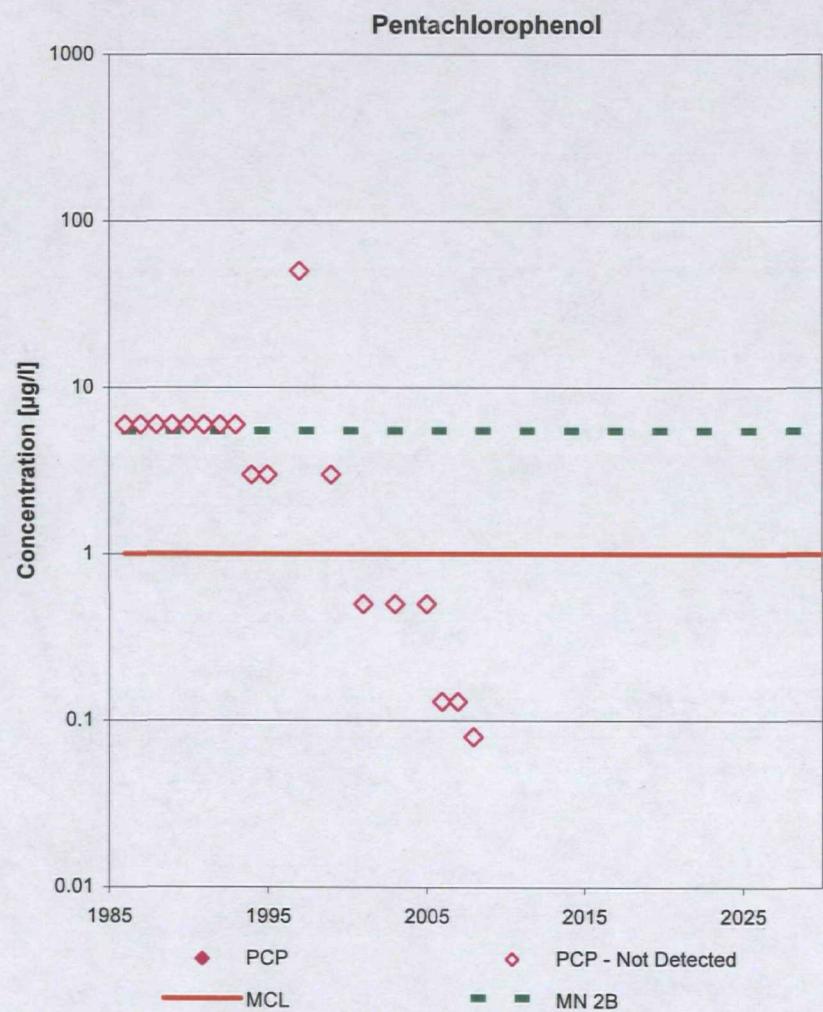
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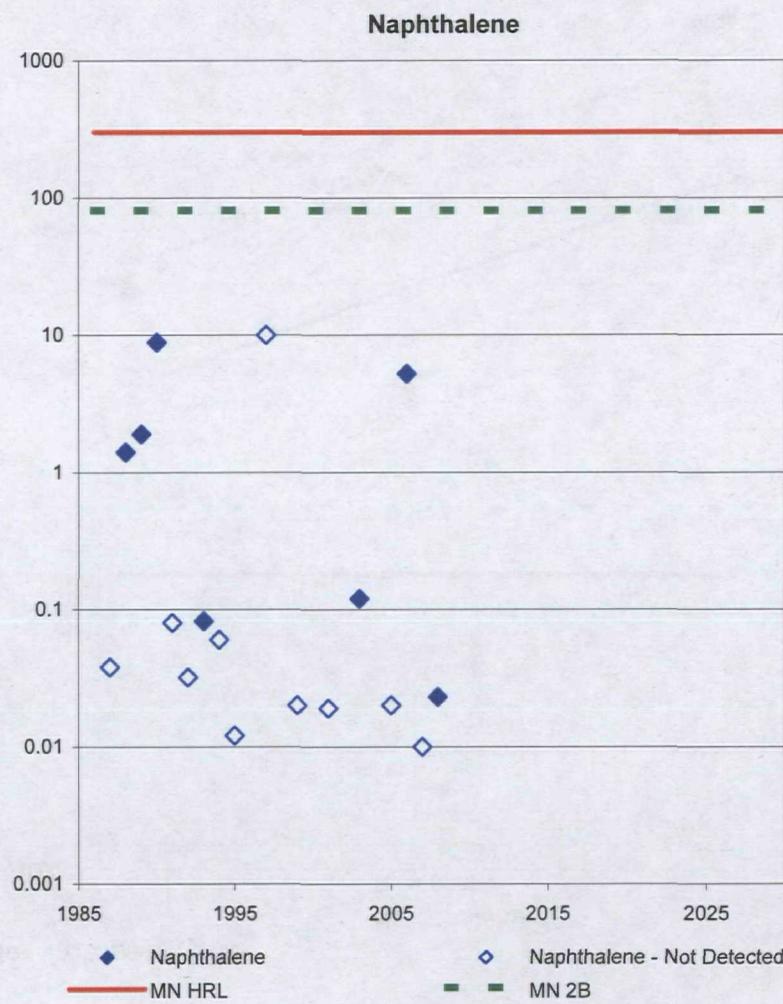
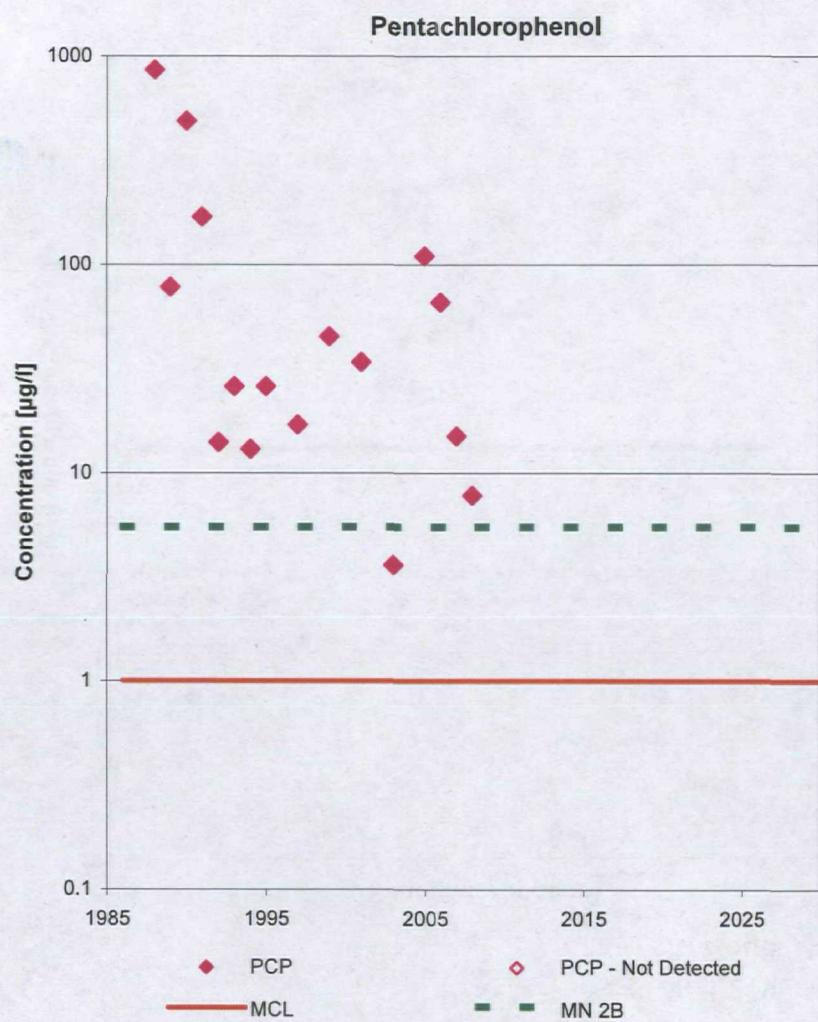
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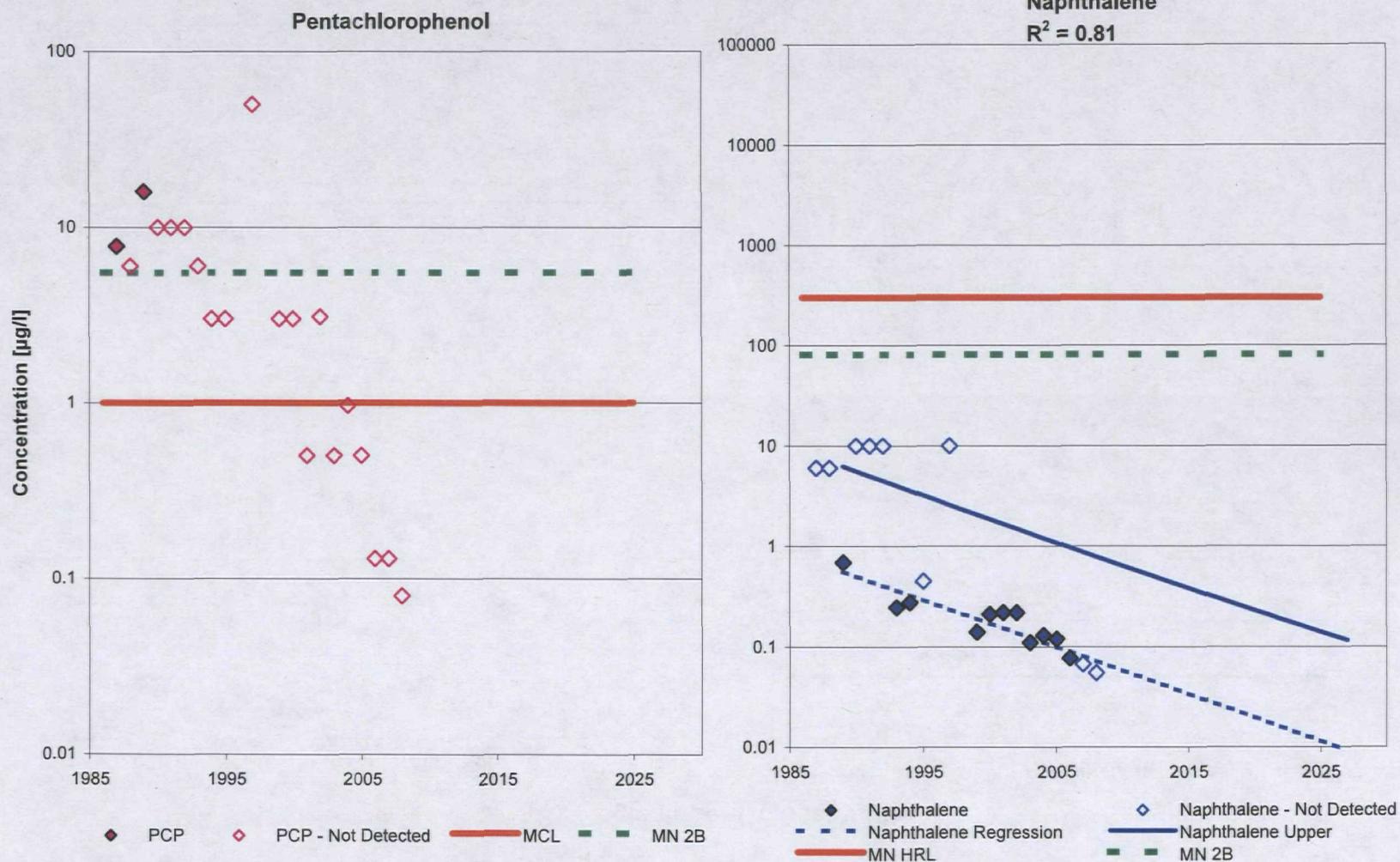
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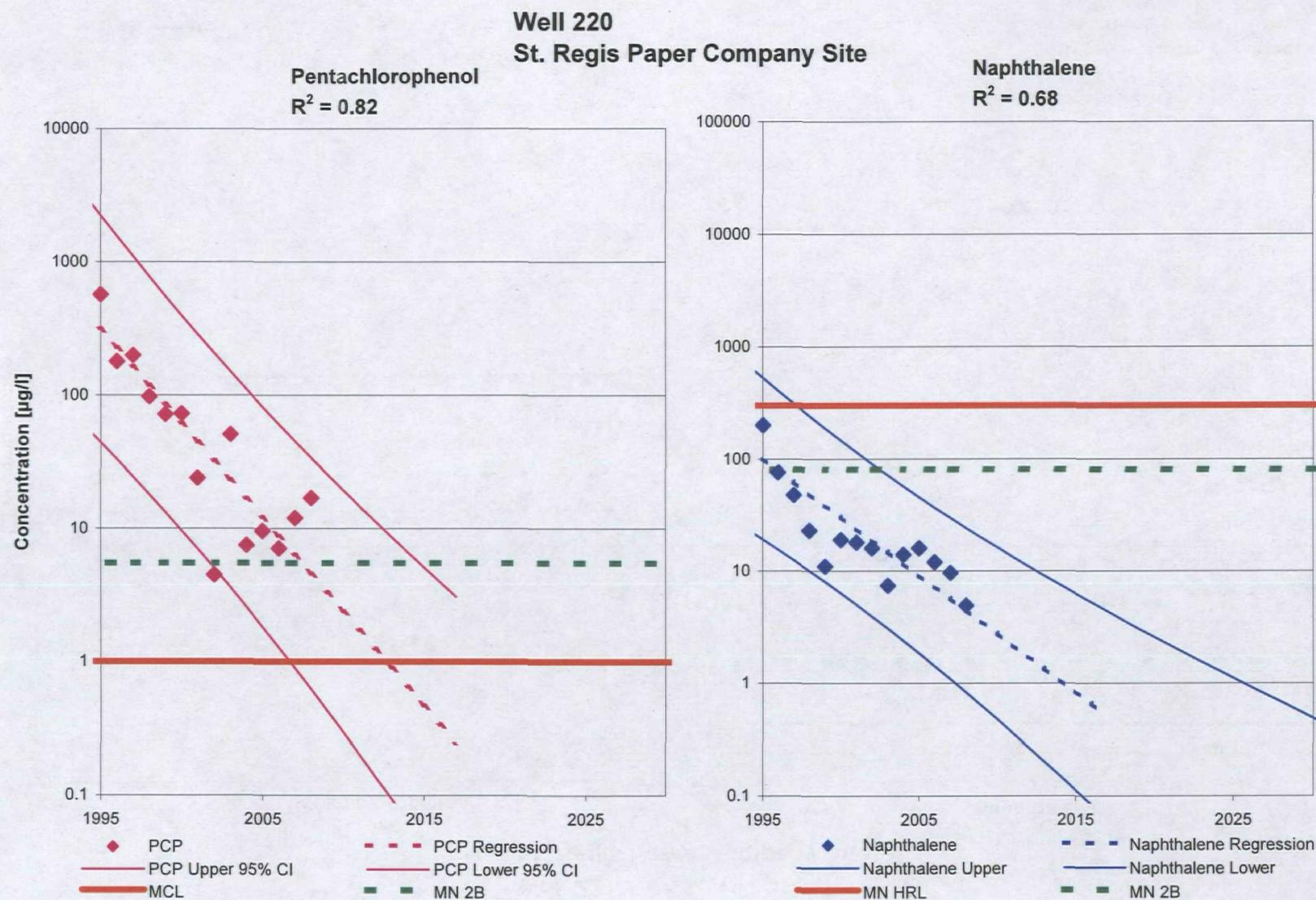


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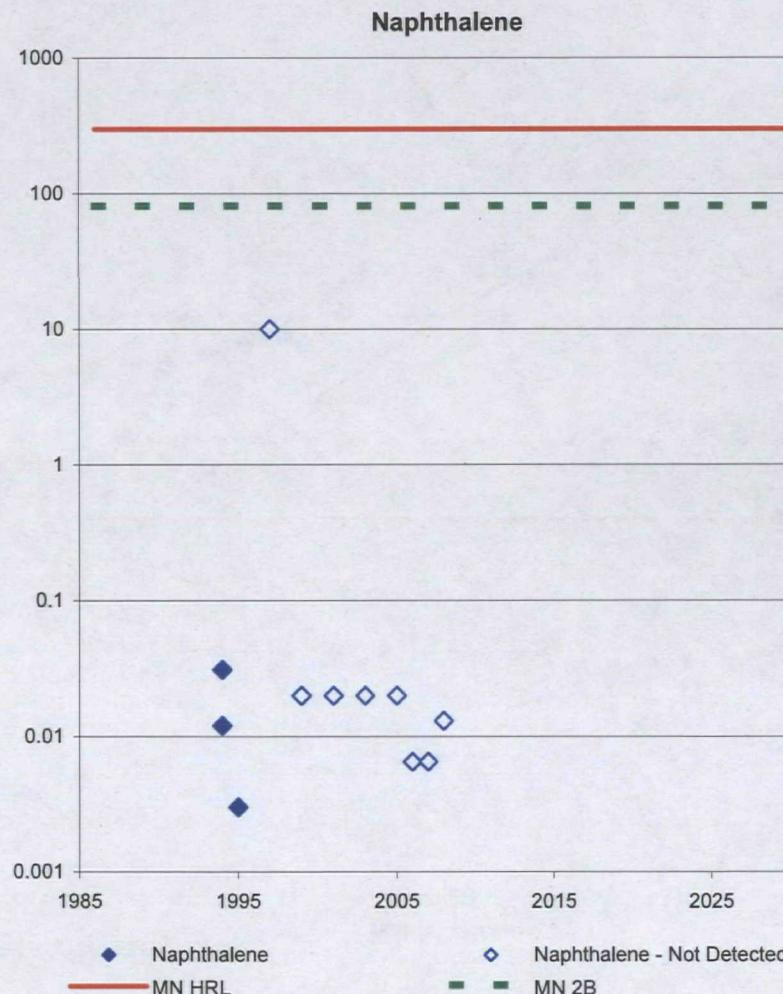
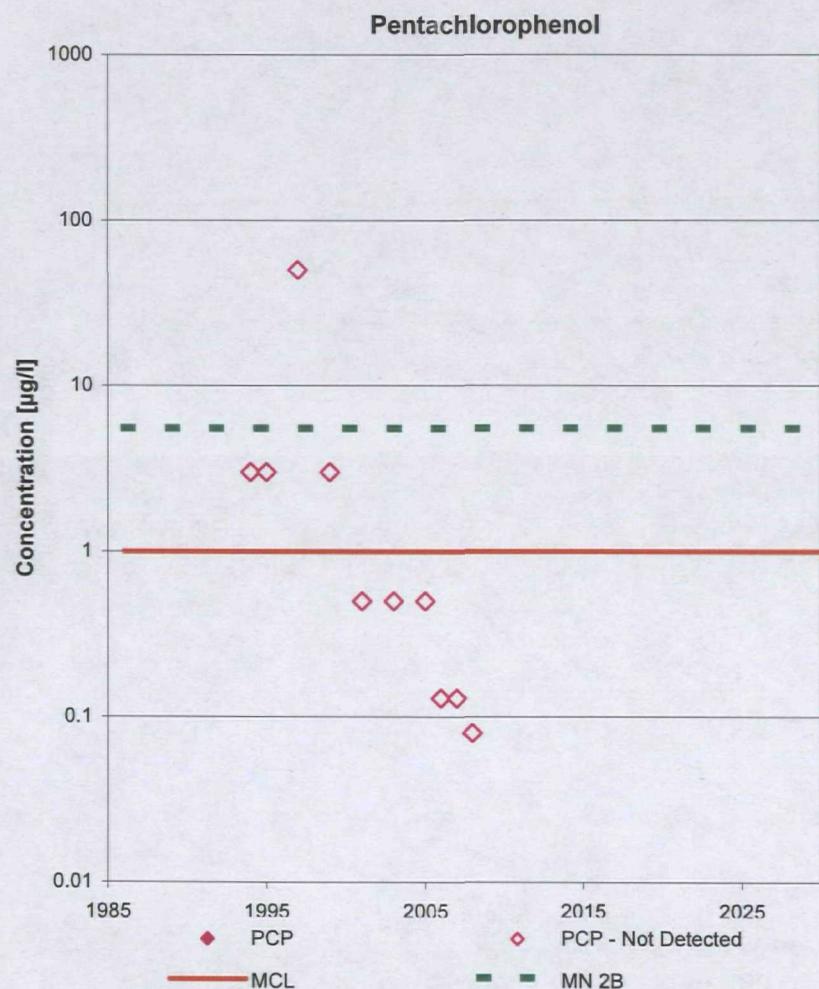


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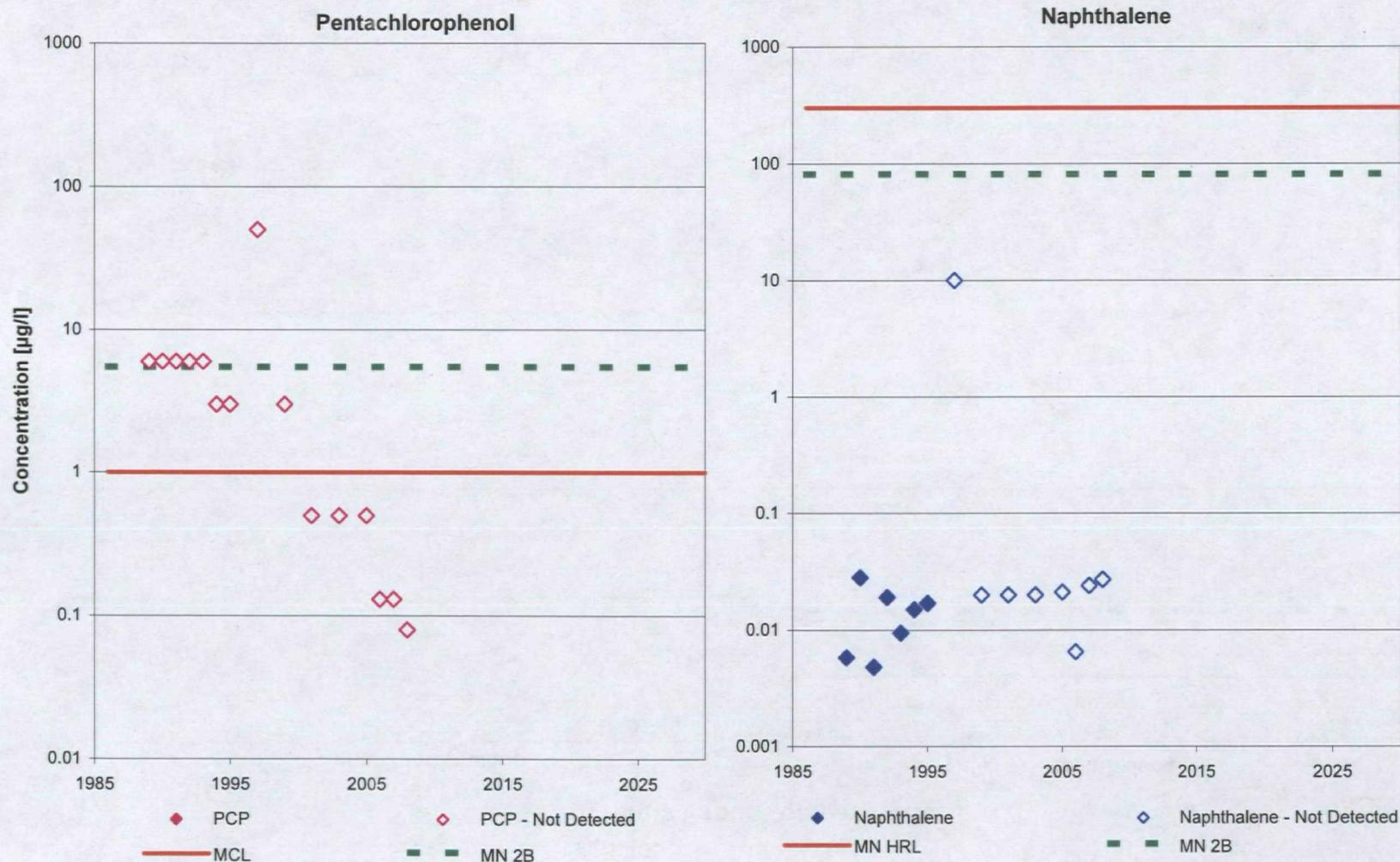




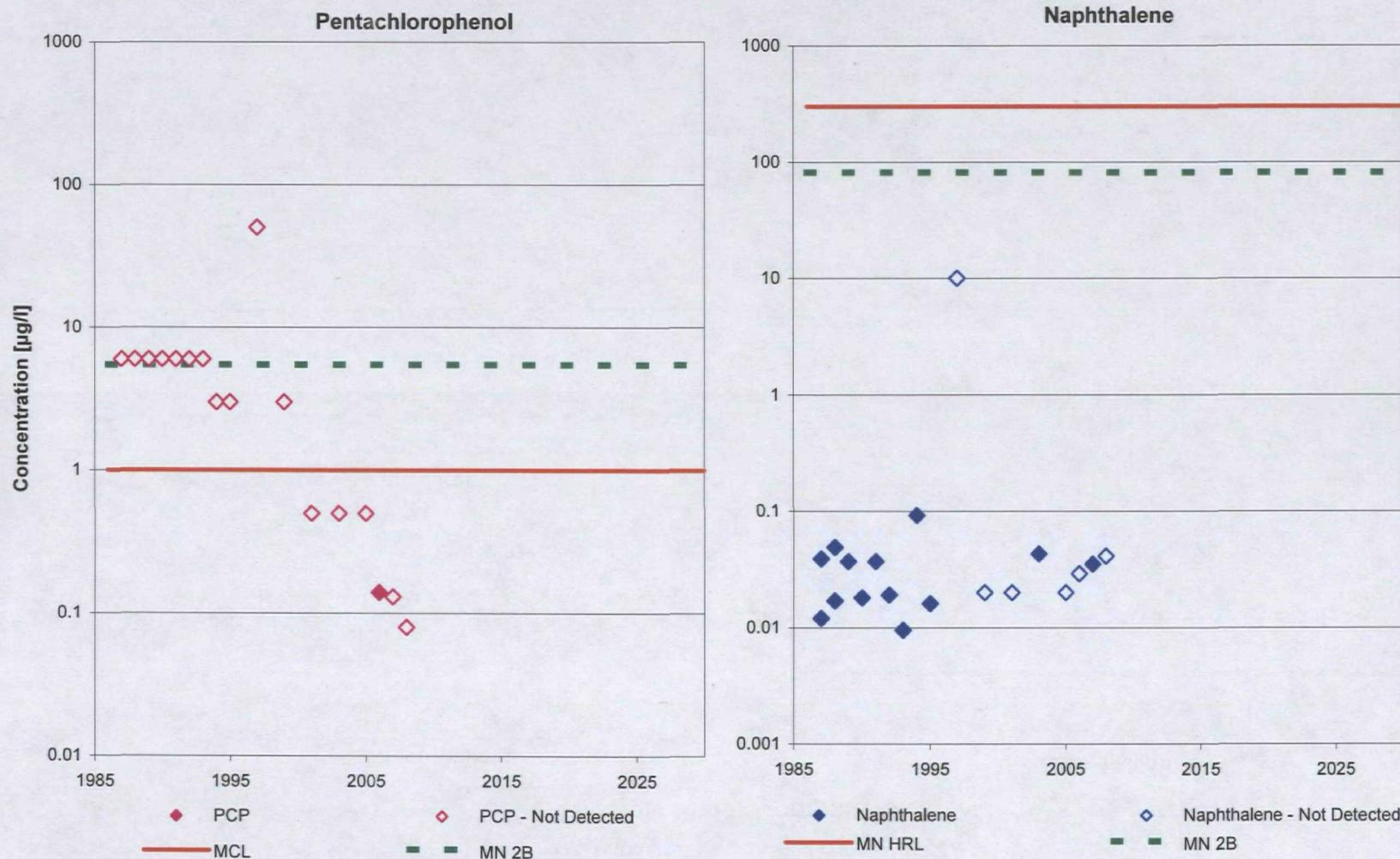
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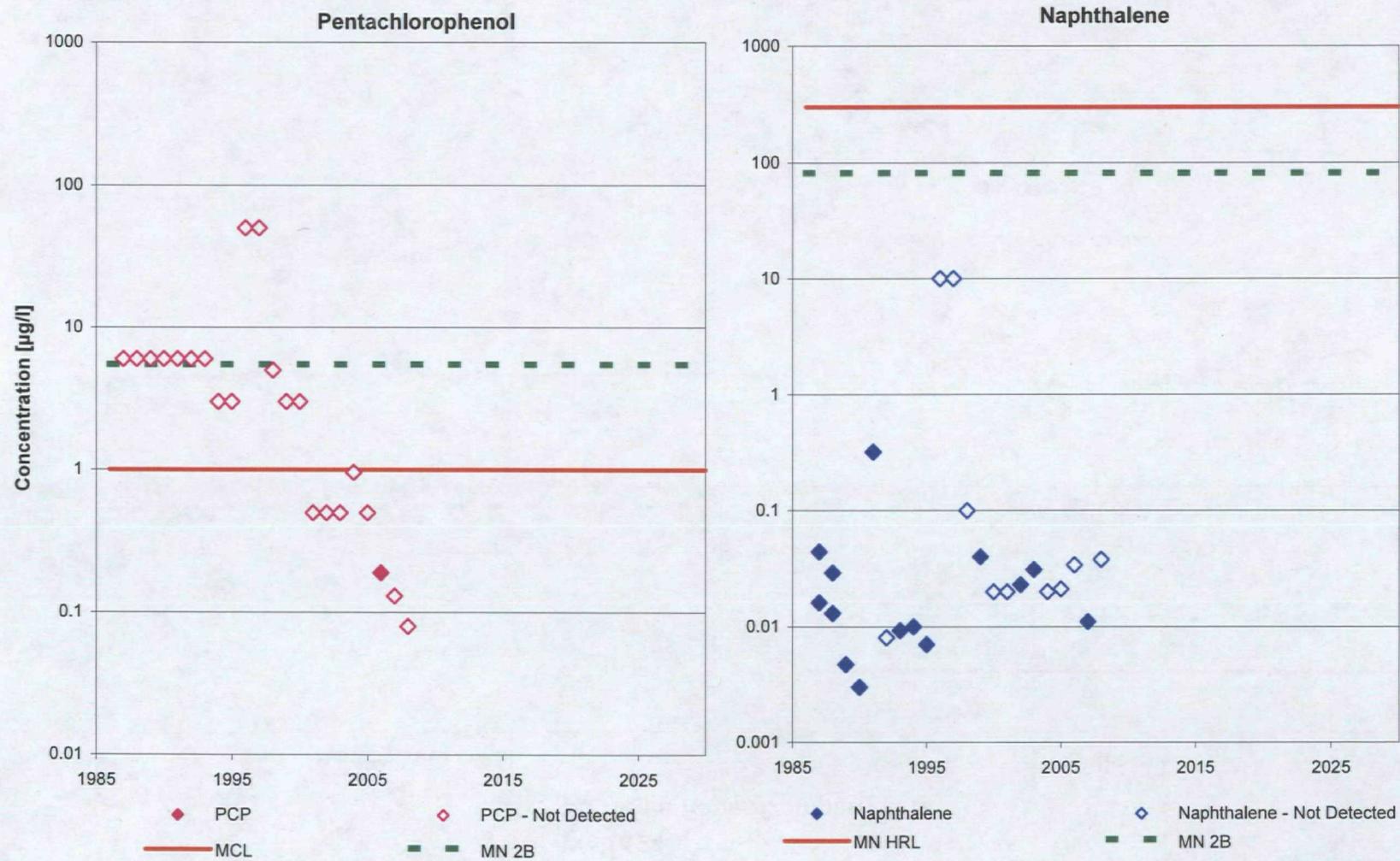
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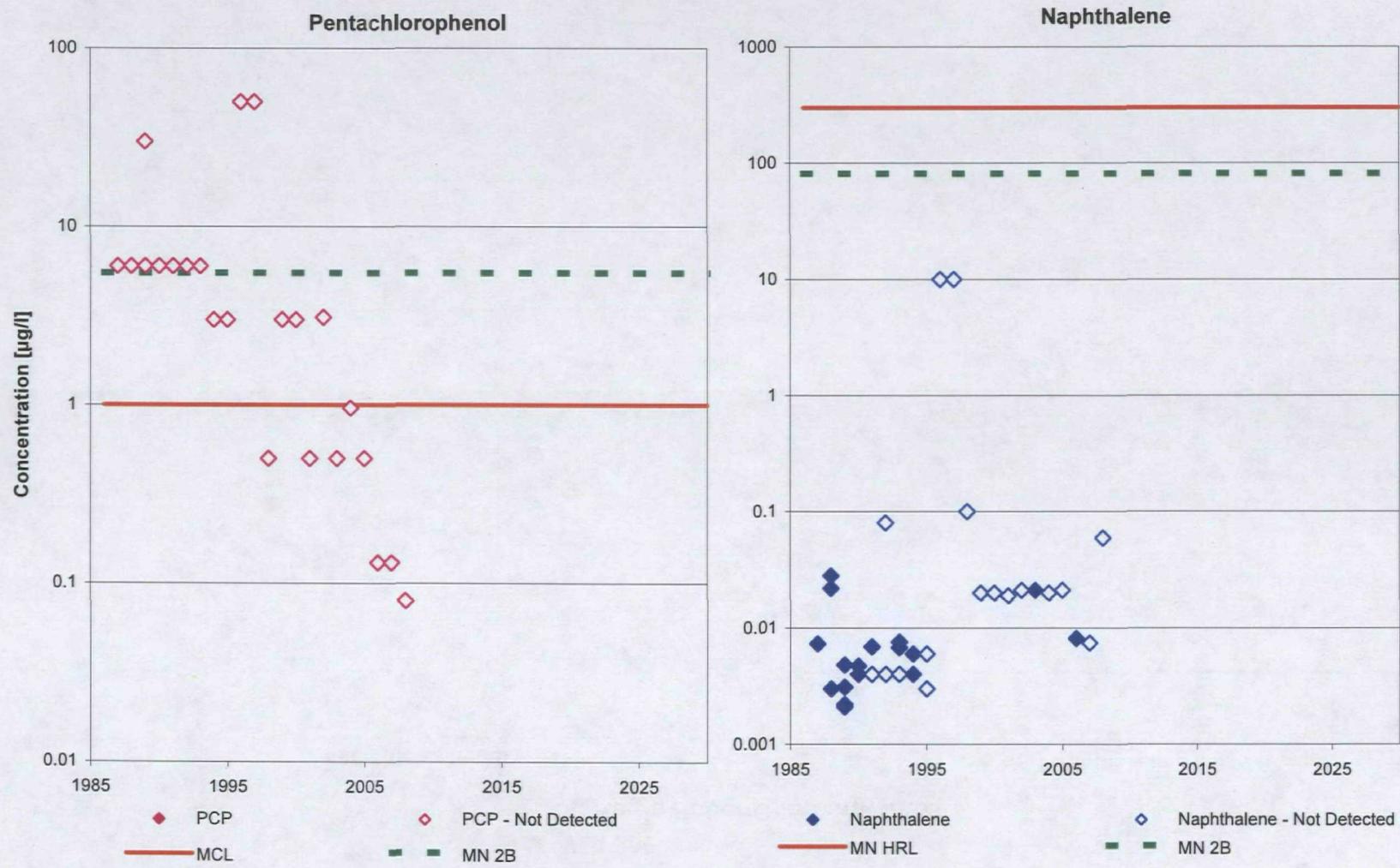
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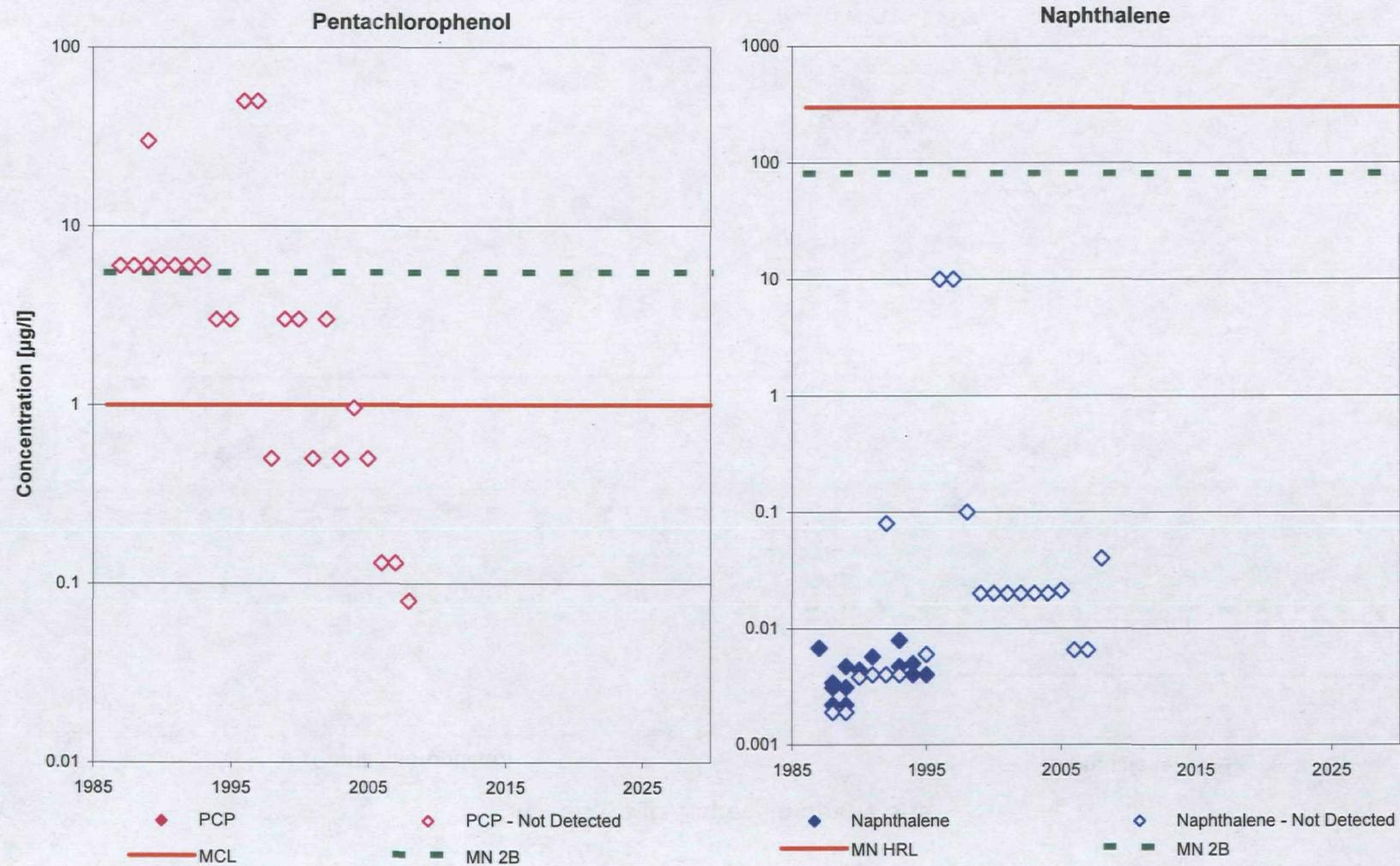
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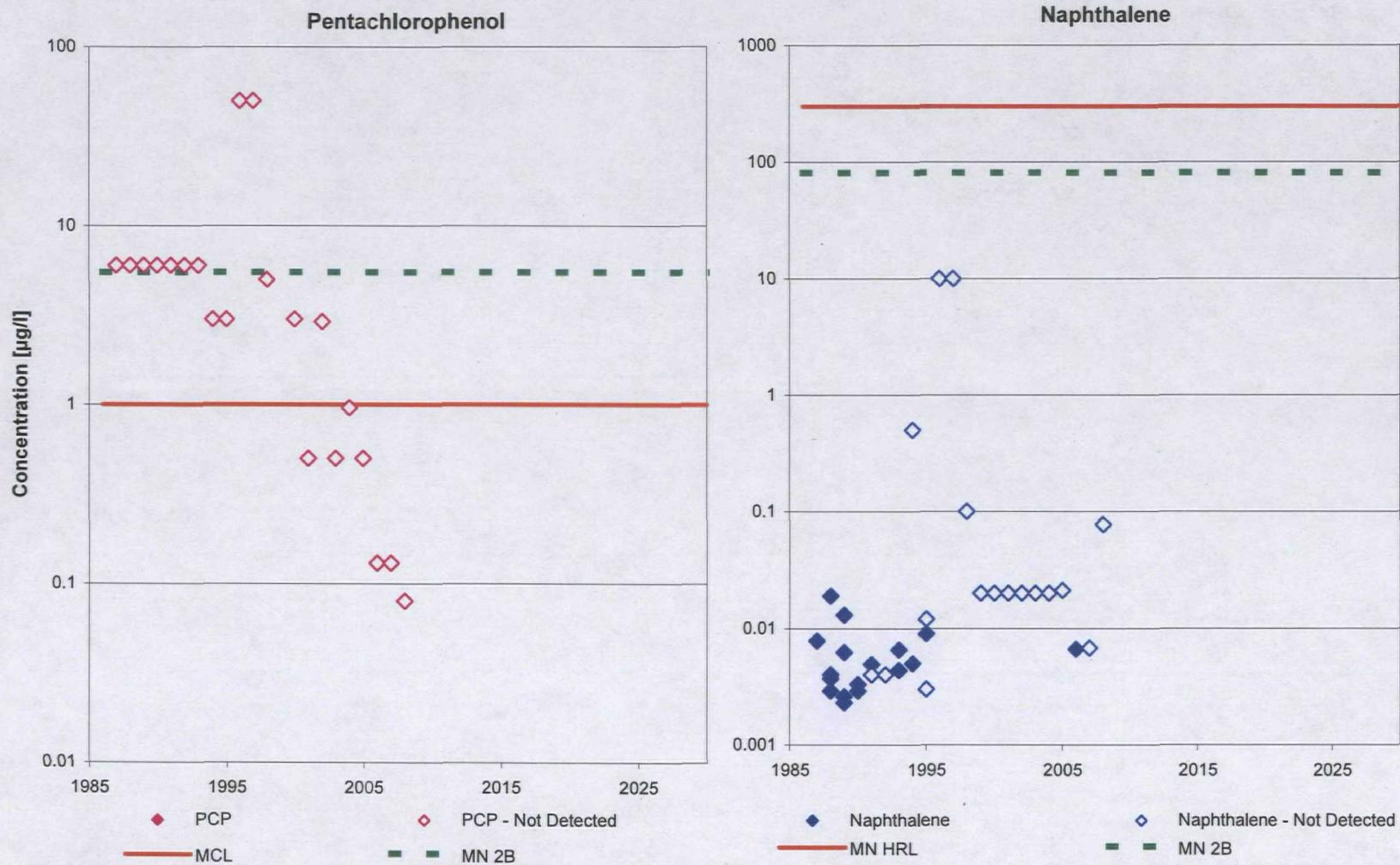
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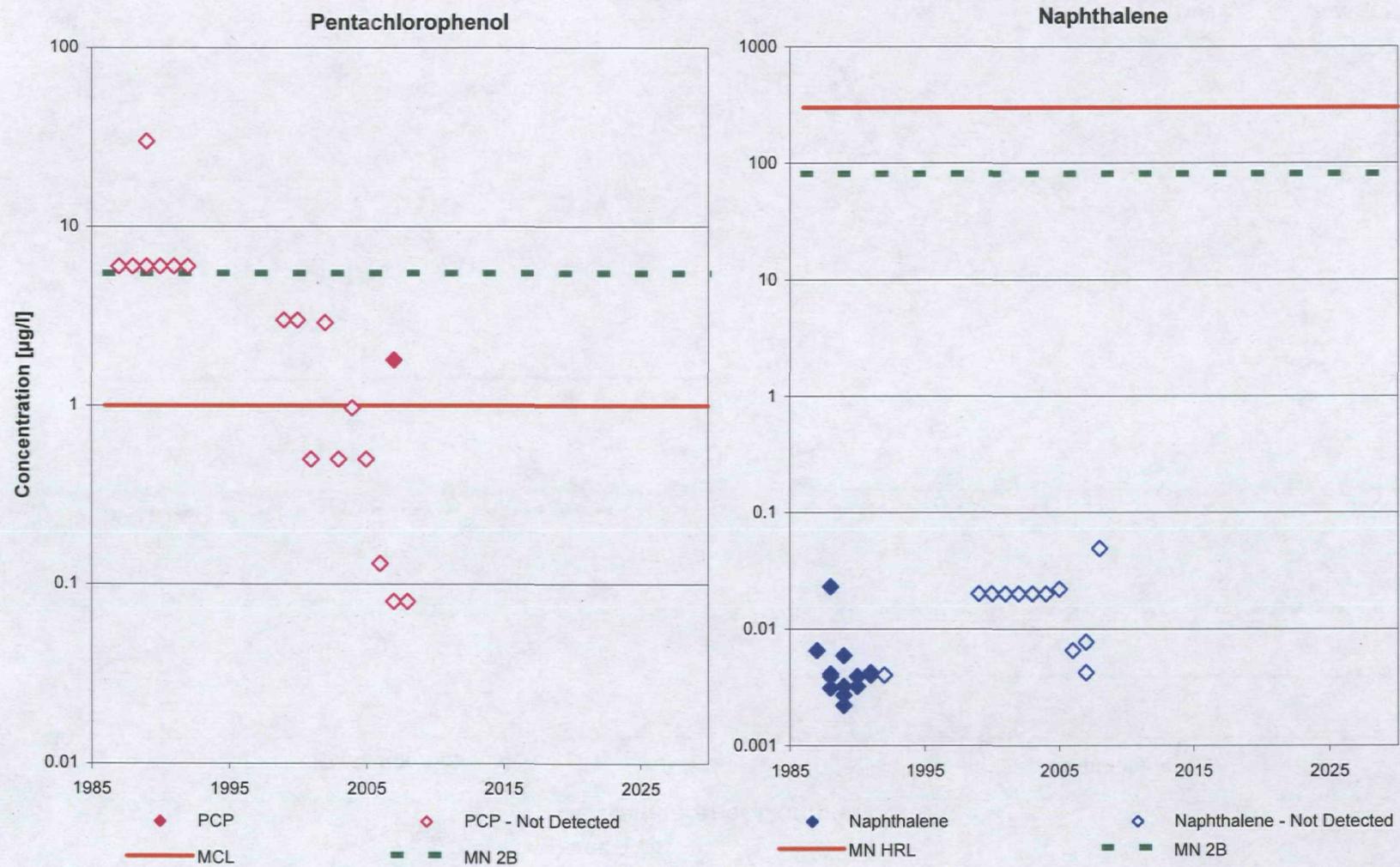
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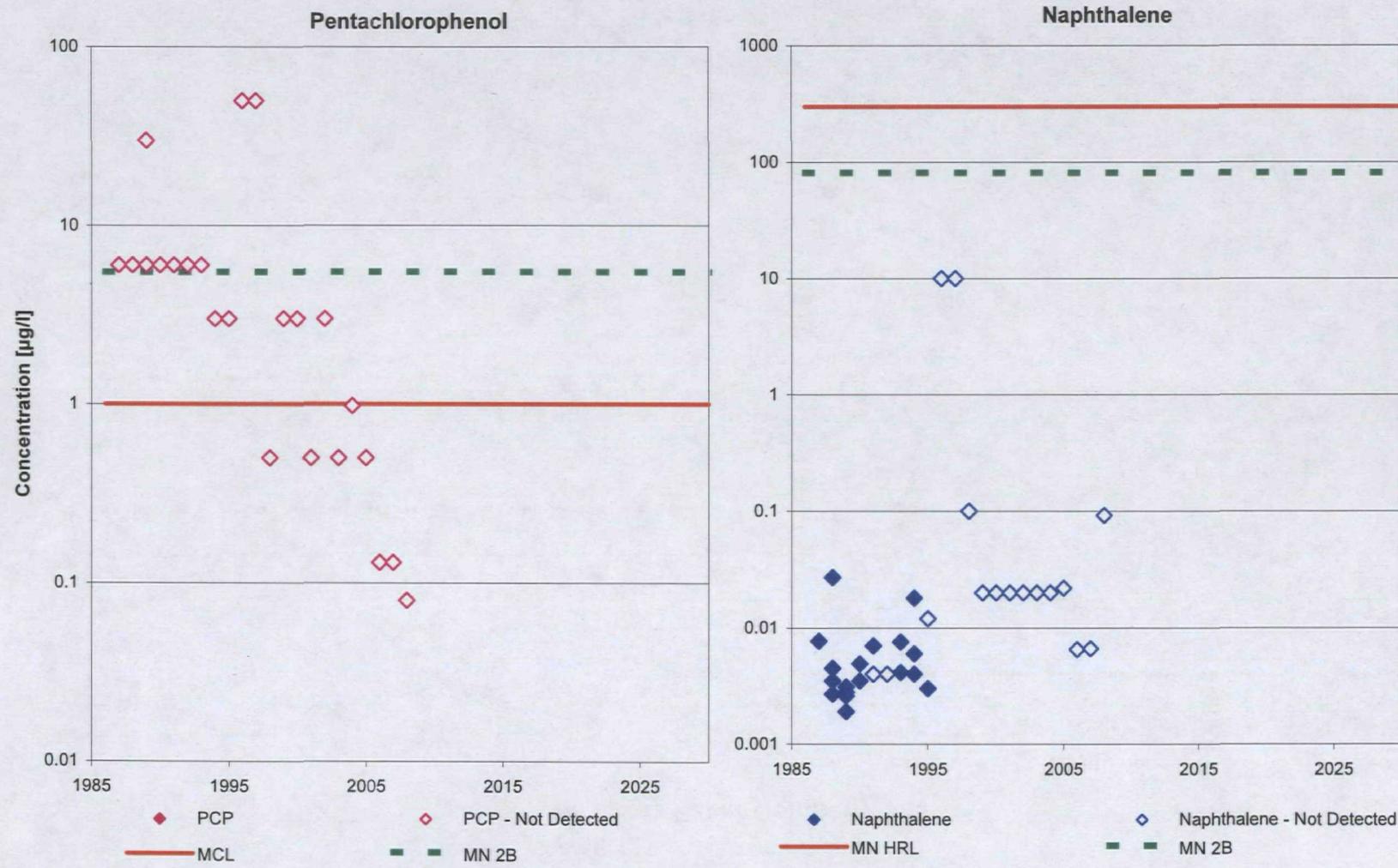
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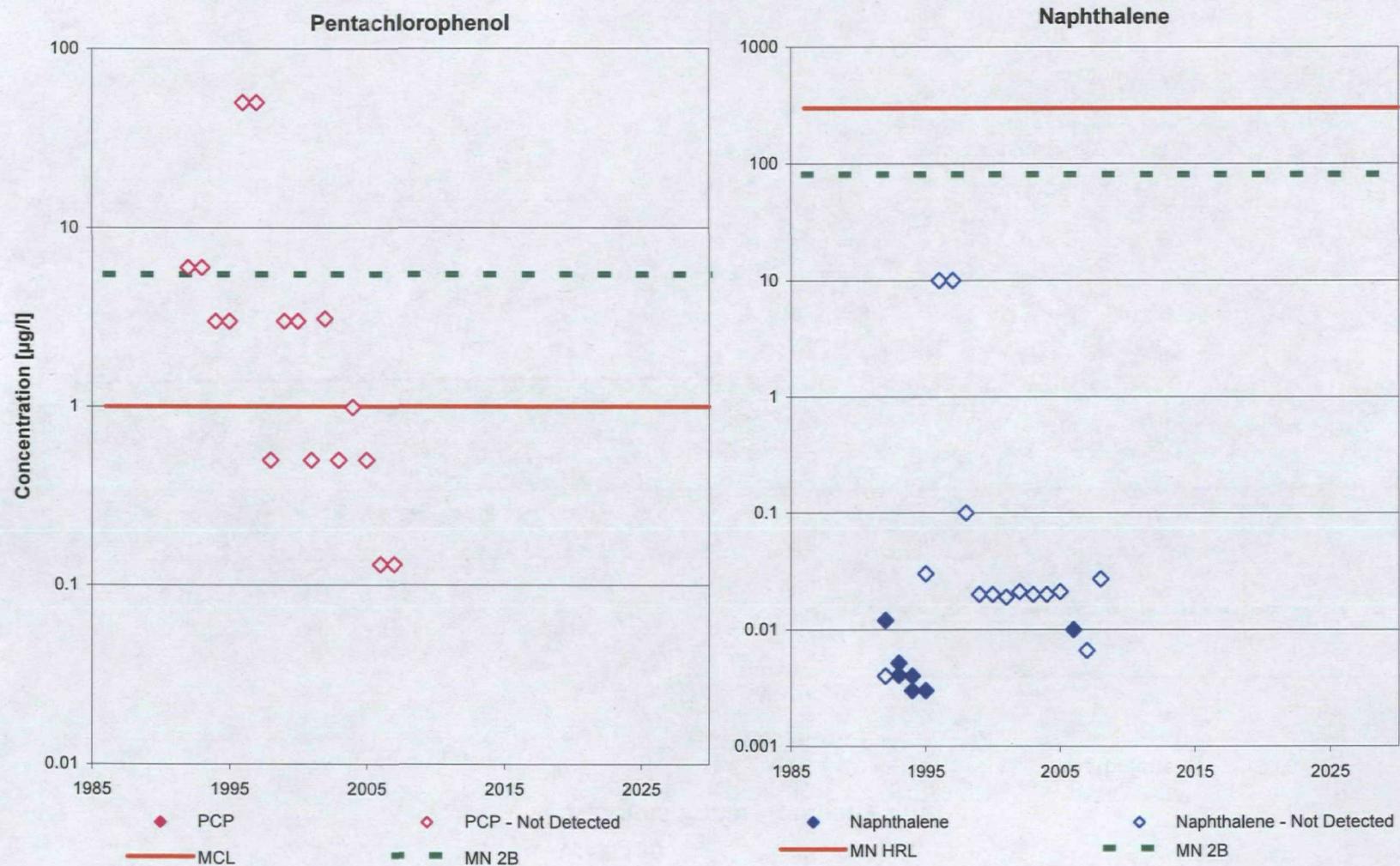
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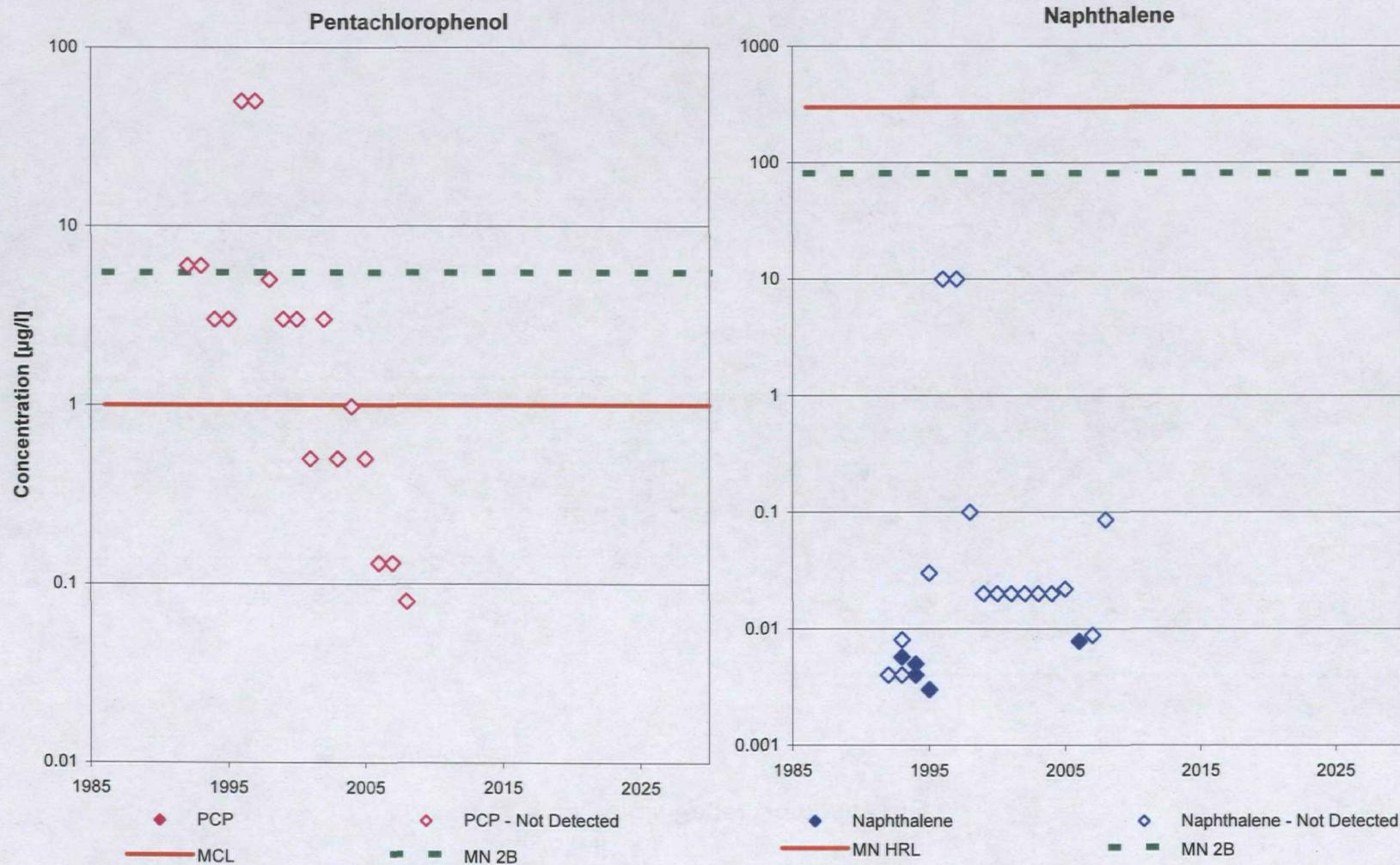
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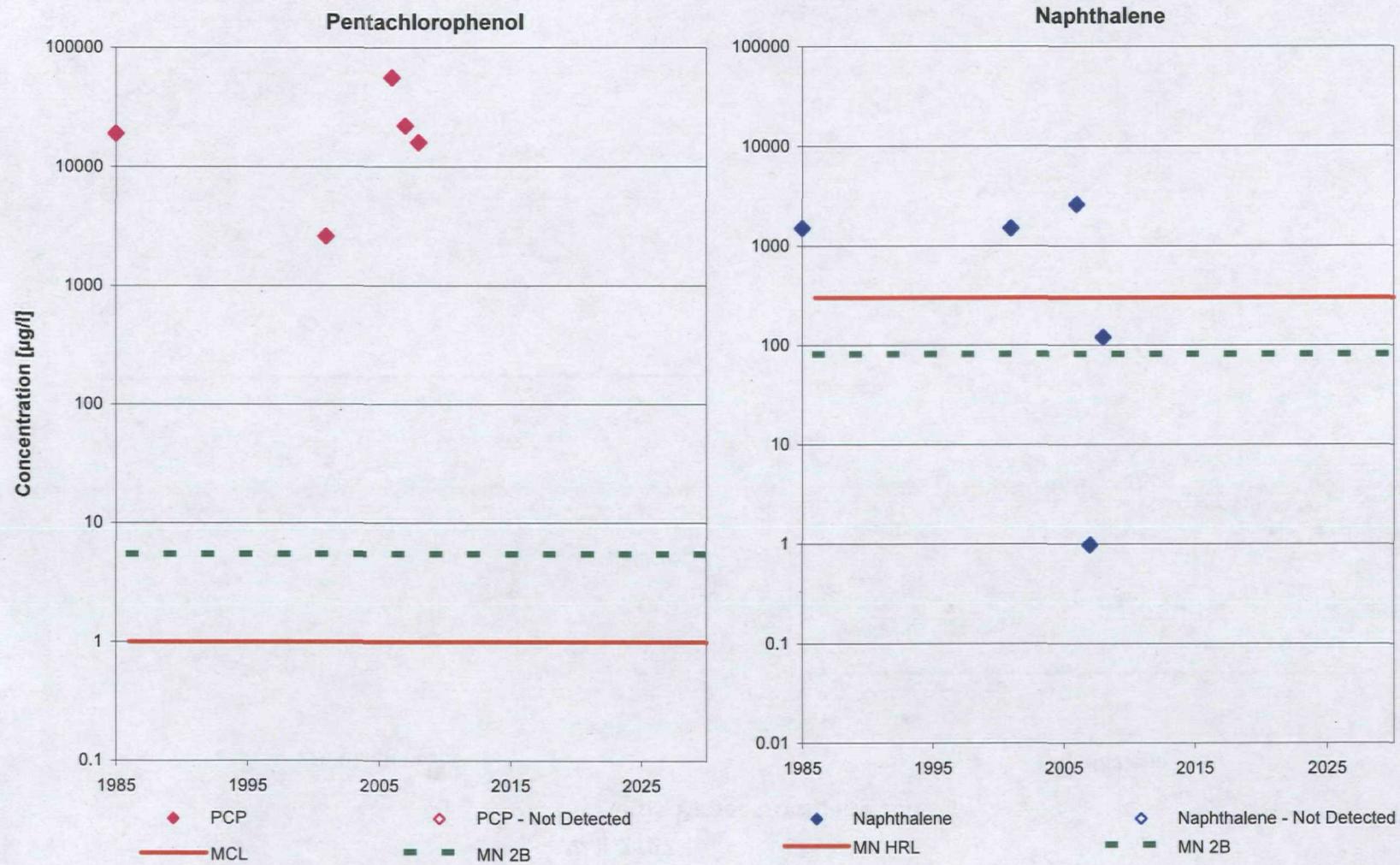
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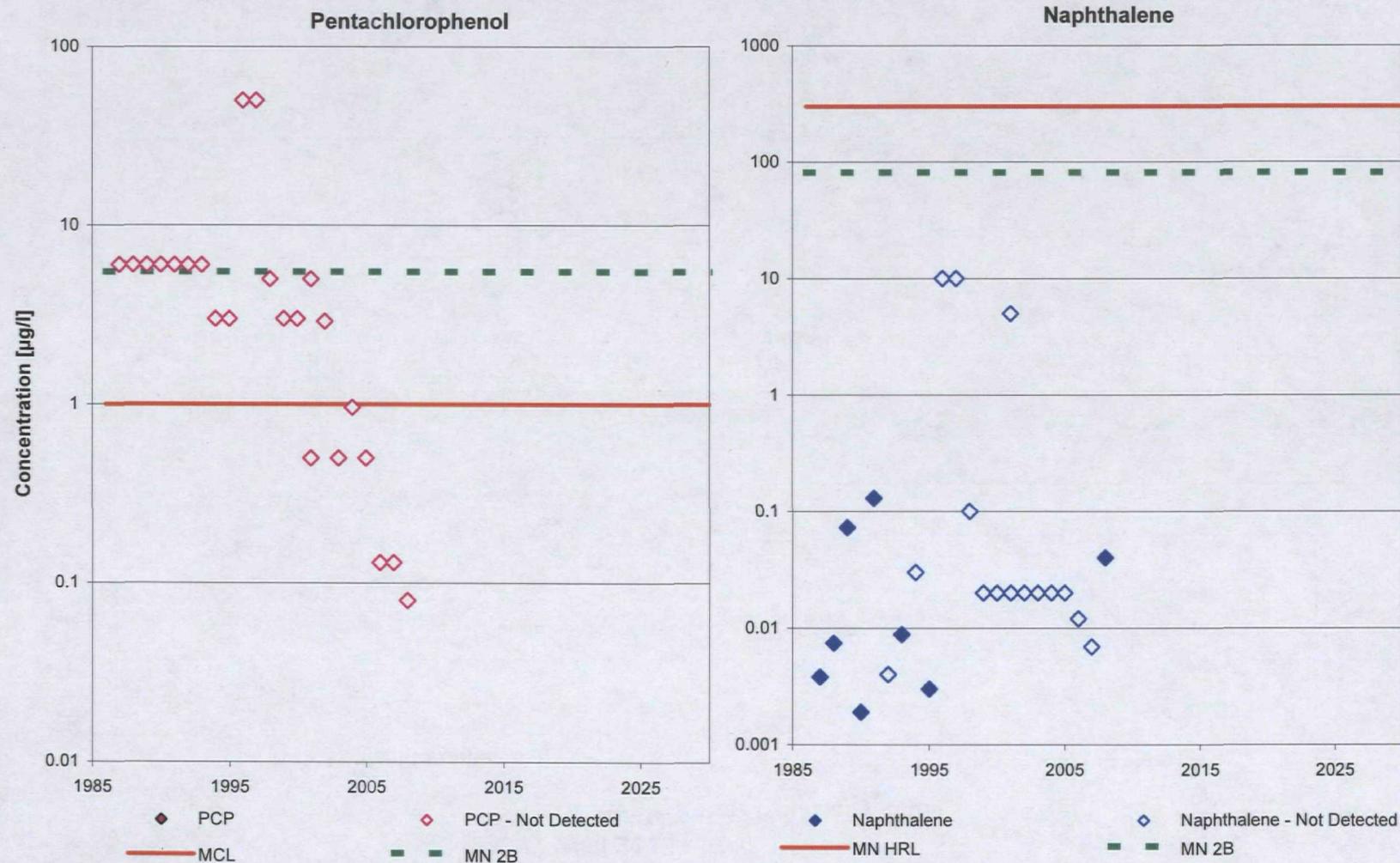
**Well 130**  
**St. Regis Paper Company Site**



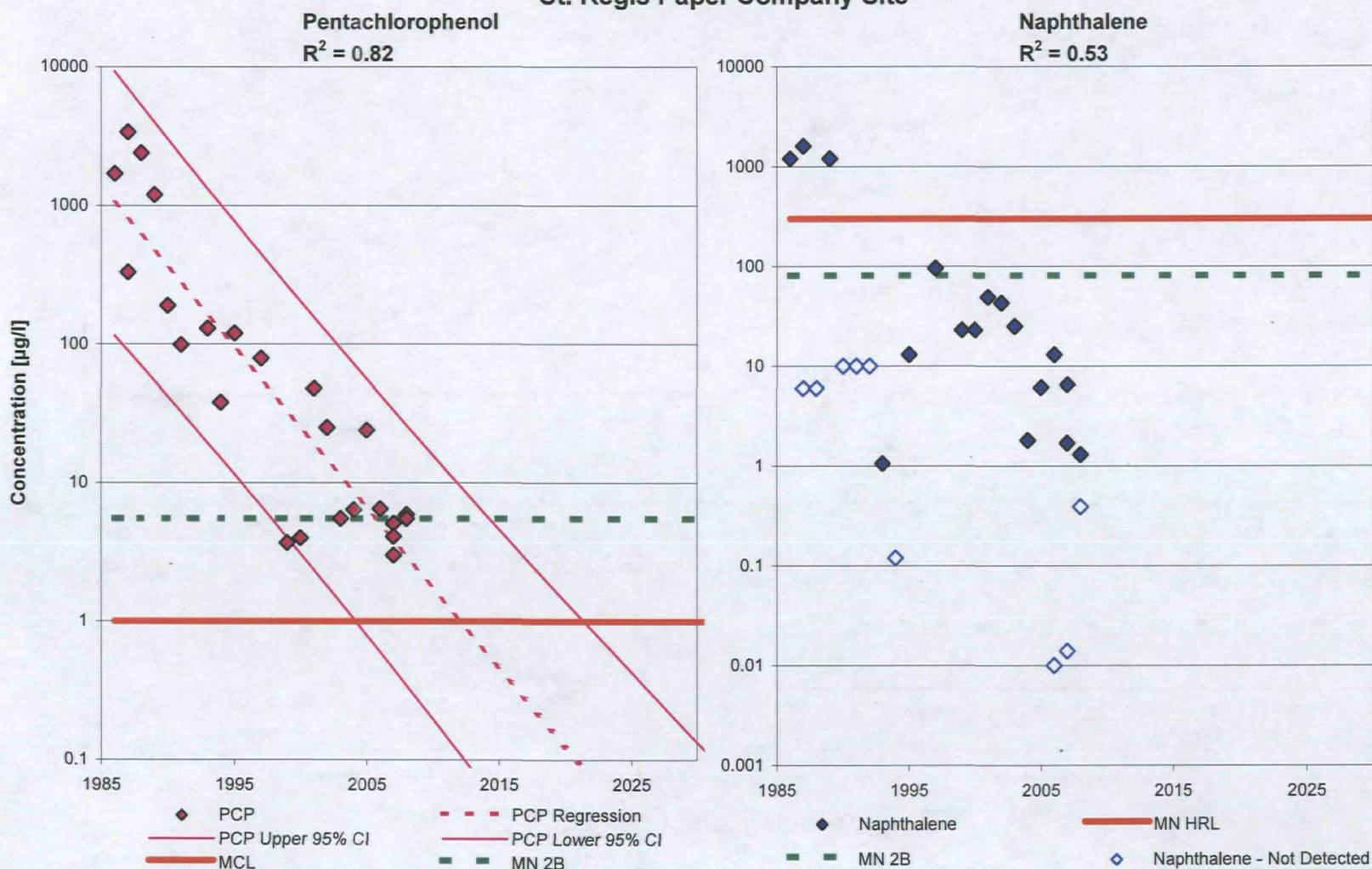
**Well 2106**  
**St. Regis Paper Company Site**



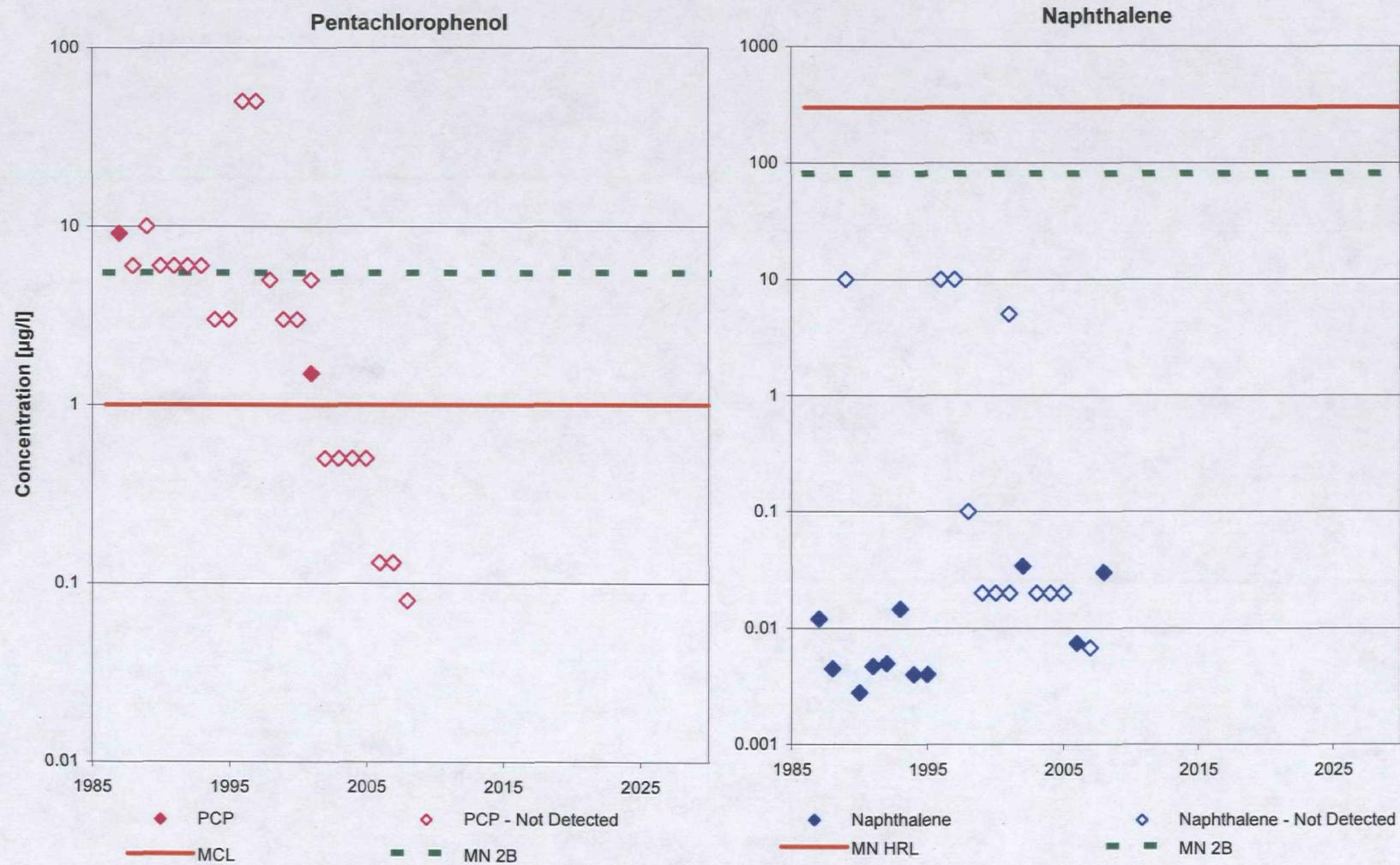
**Well 2127**  
**St. Regis Paper Company Site**



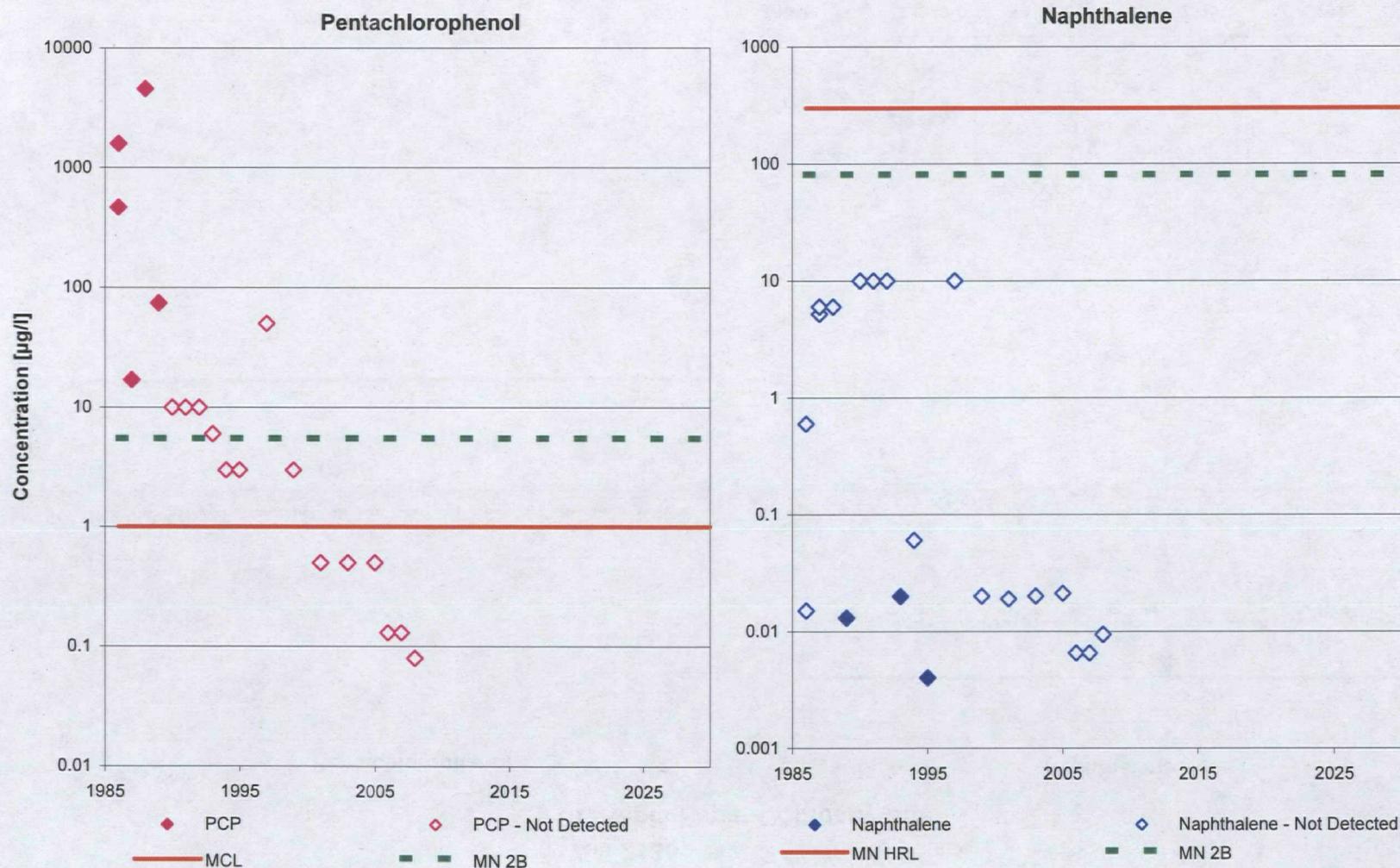
**Well 2128**  
**St. Regis Paper Company Site**



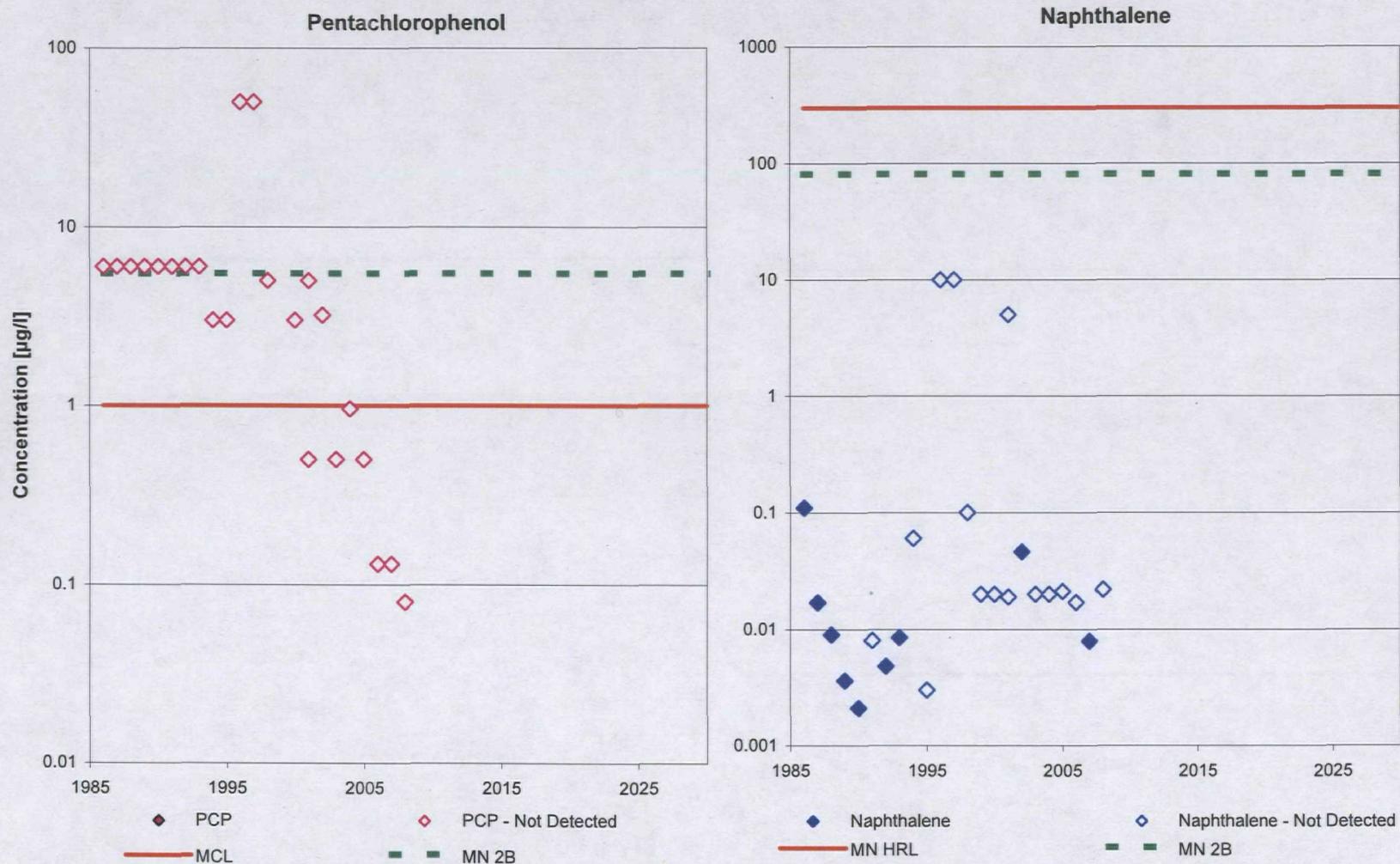
**Well 2129**  
**St. Regis Paper Company Site**



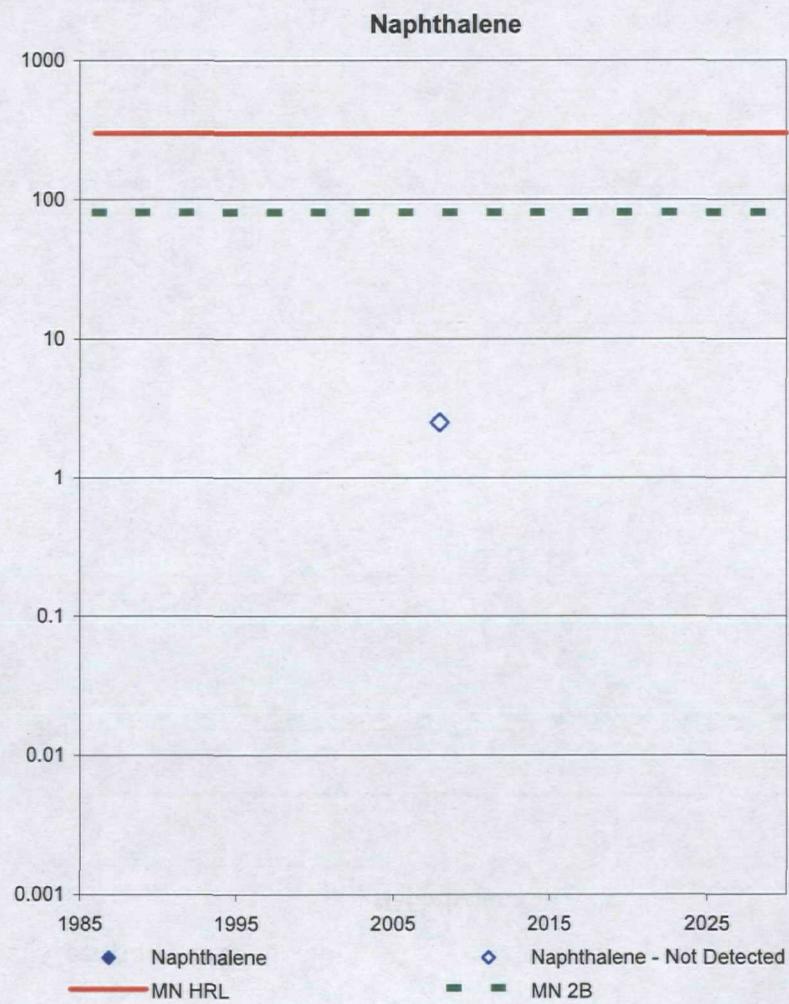
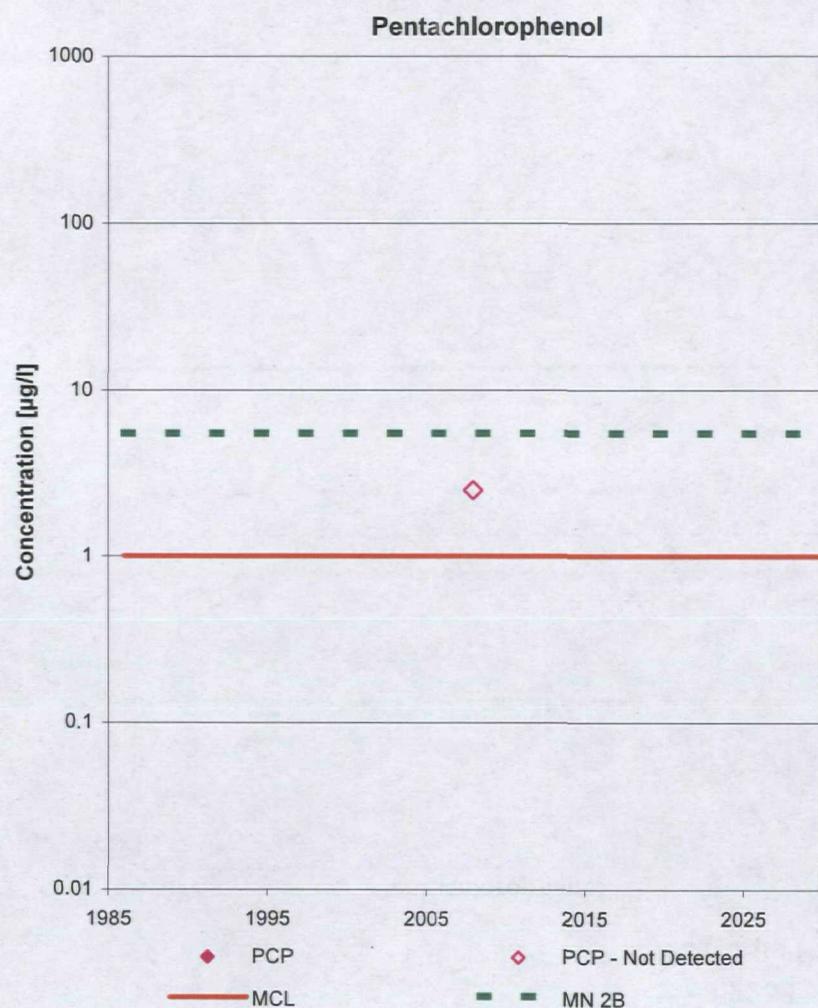
**Well 2134**  
**St. Regis Paper Company Site**



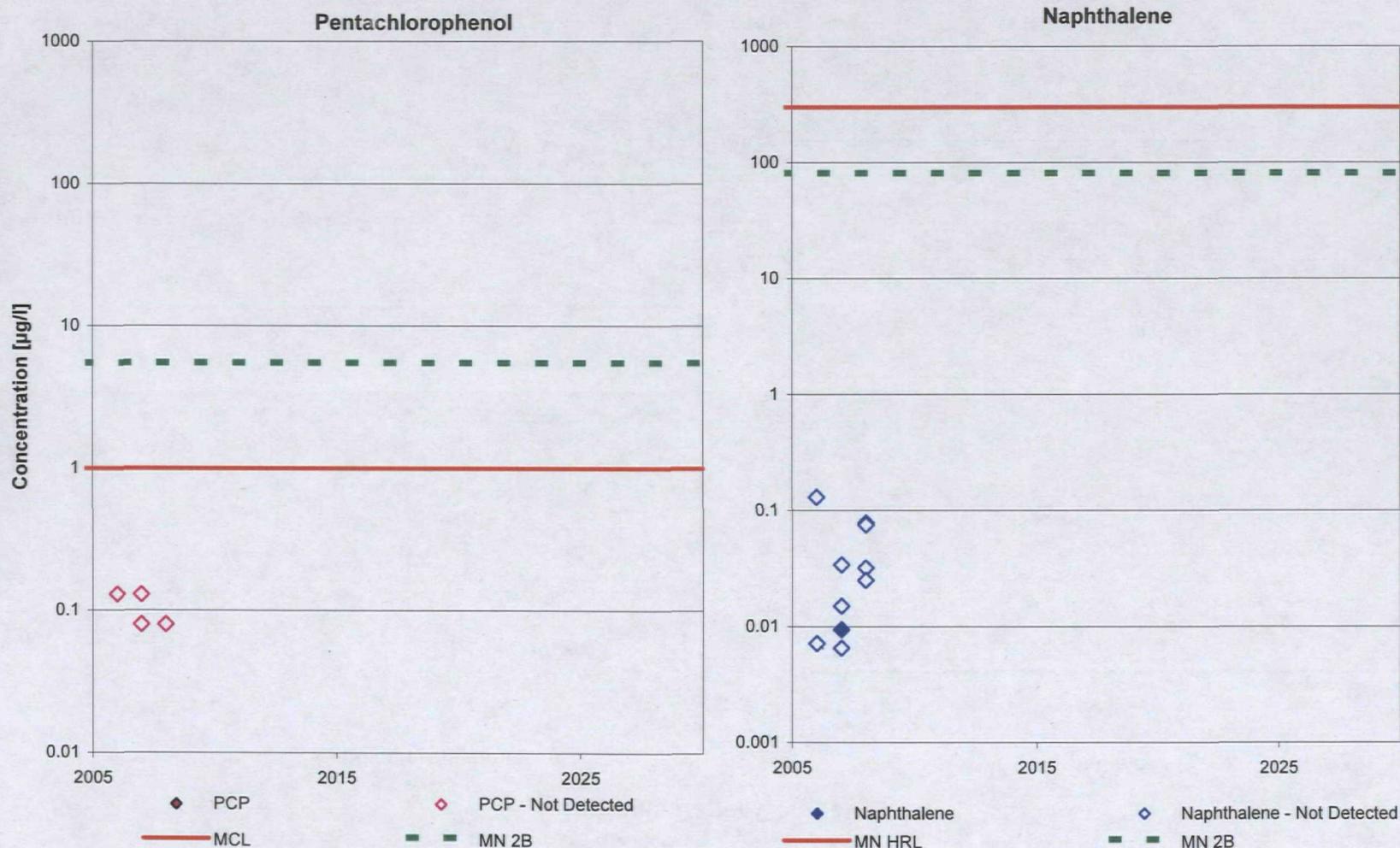
**Well 2135**  
**St. Regis Paper Company Site**



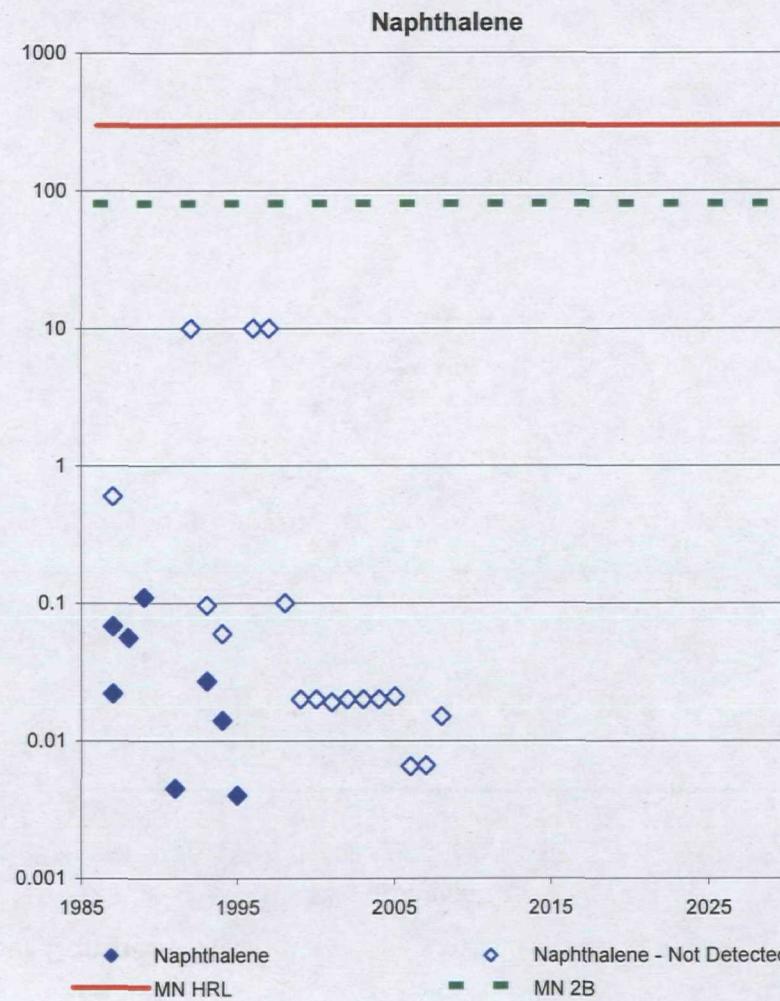
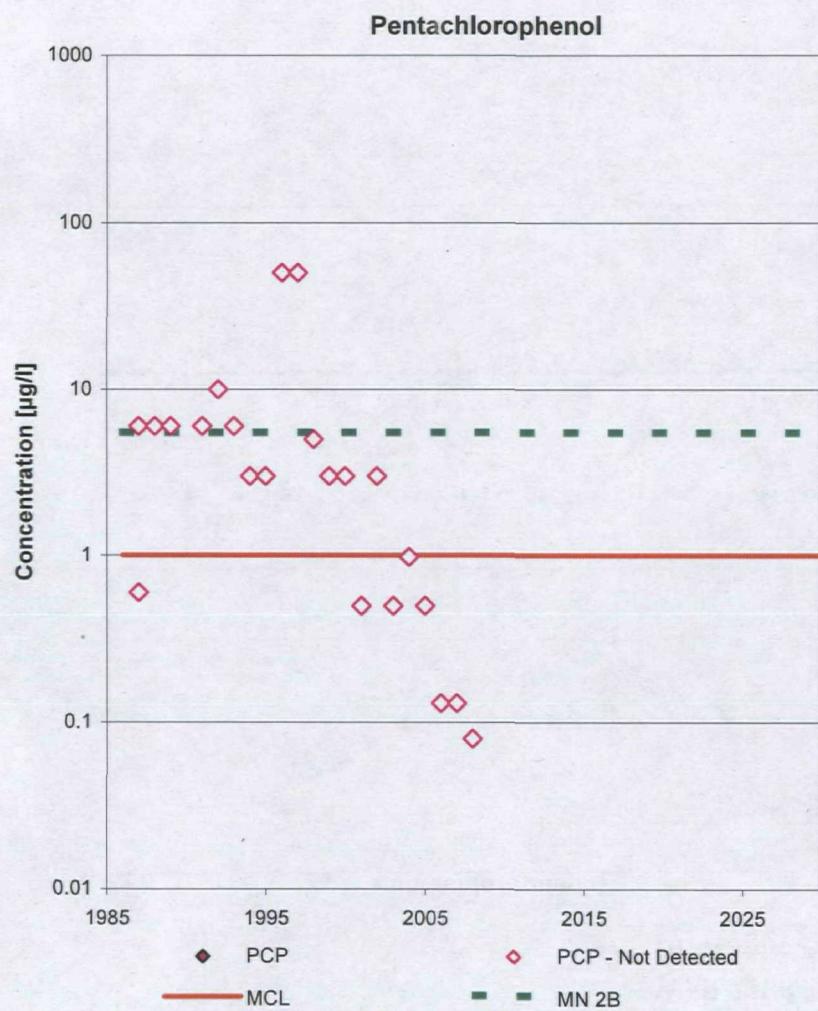
**Well 2228**  
**St. Regis Paper Company Site**



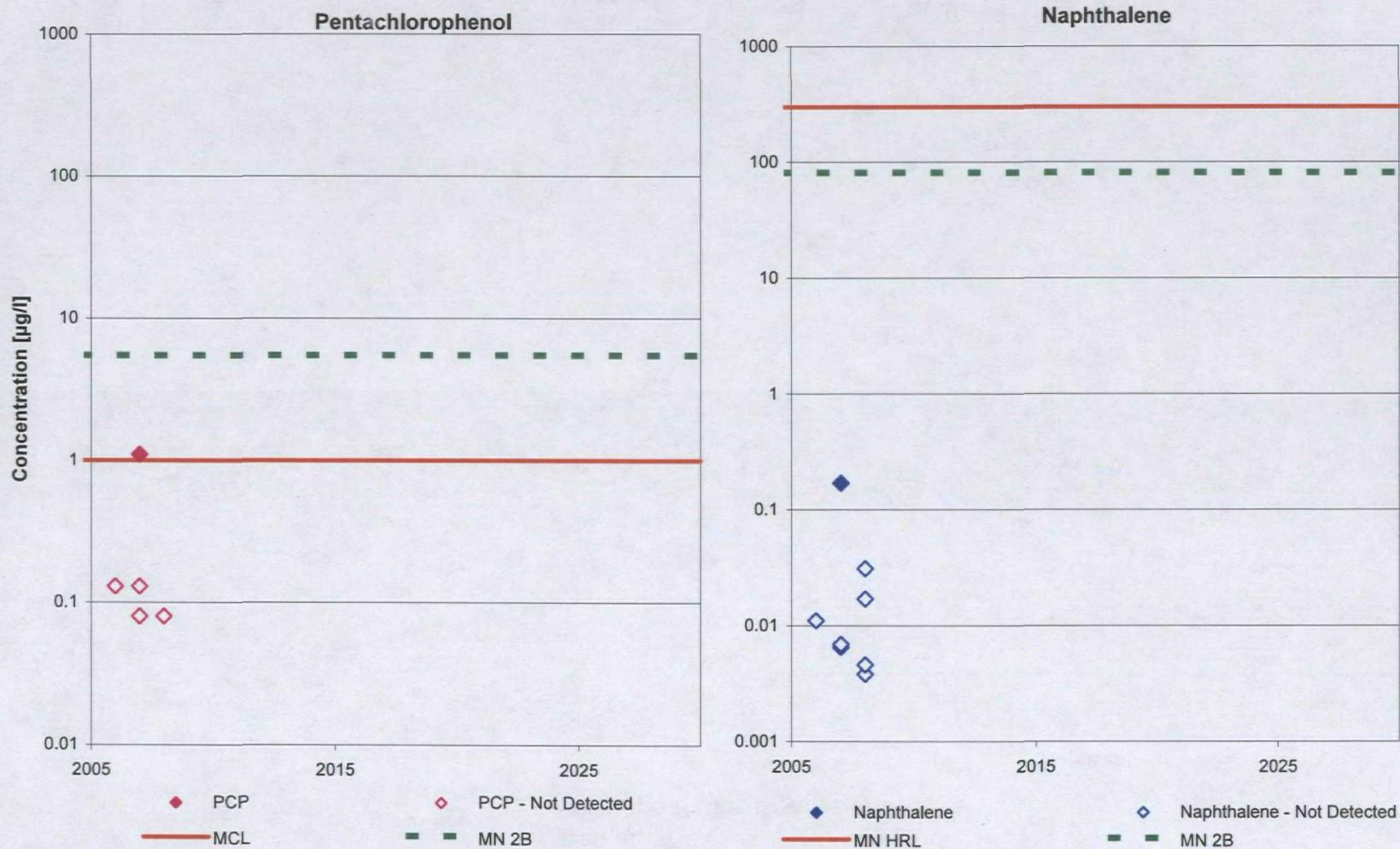
**Well 2233**  
**St. Regis Paper Company Site**



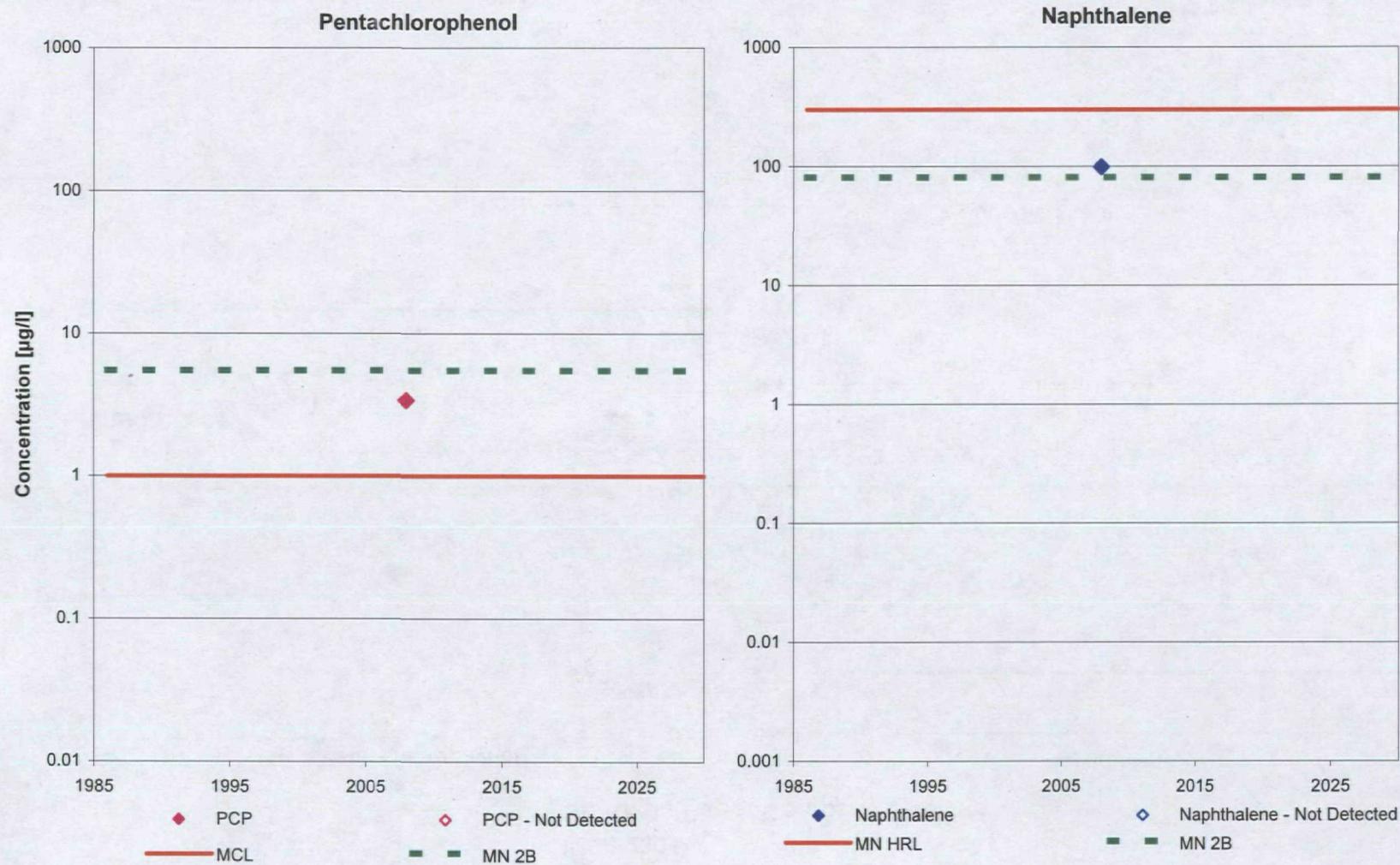
**Well 2234**  
**St. Regis Paper Company Site**



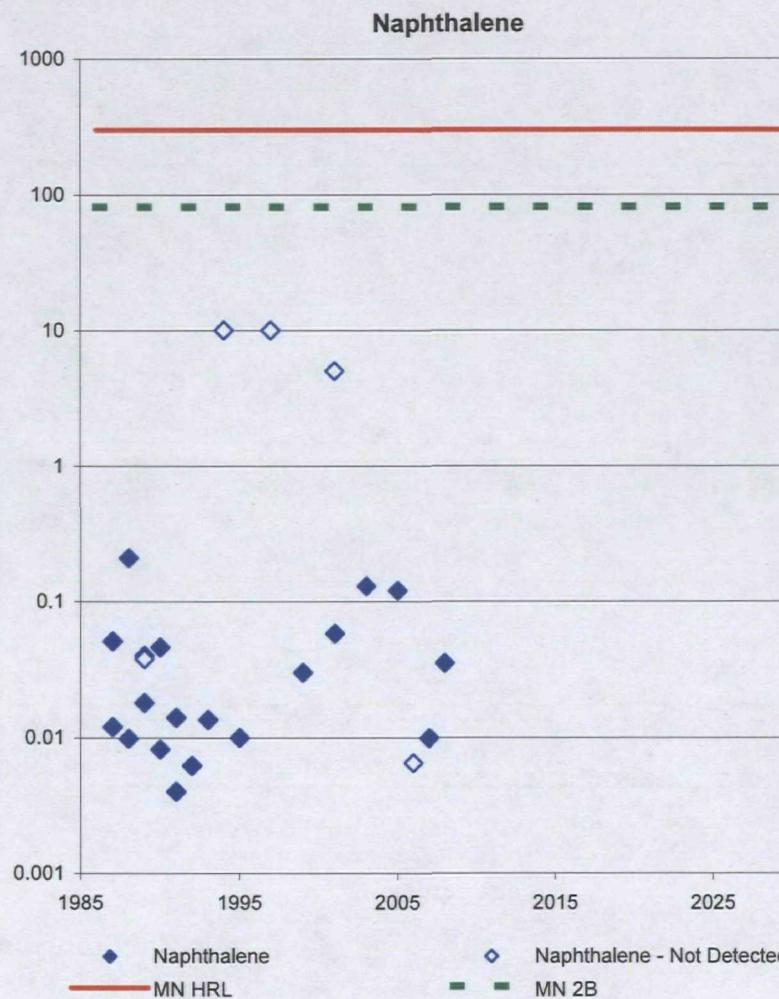
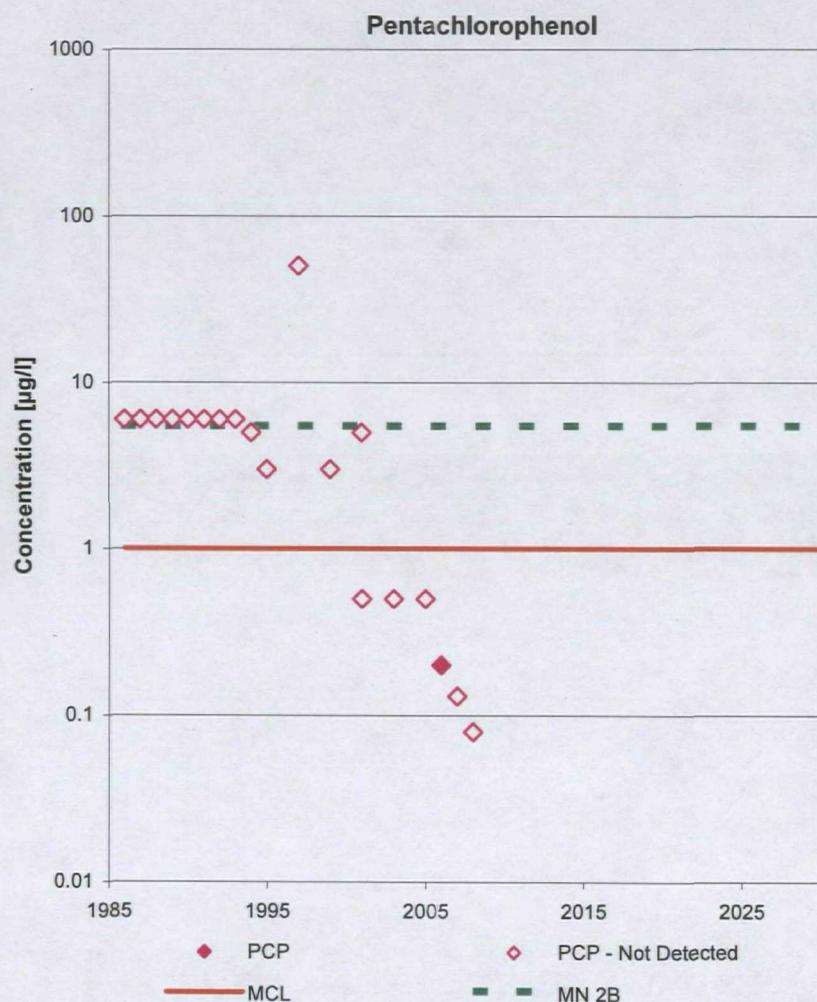
**Well 2236**  
**St. Regis Paper Company Site**



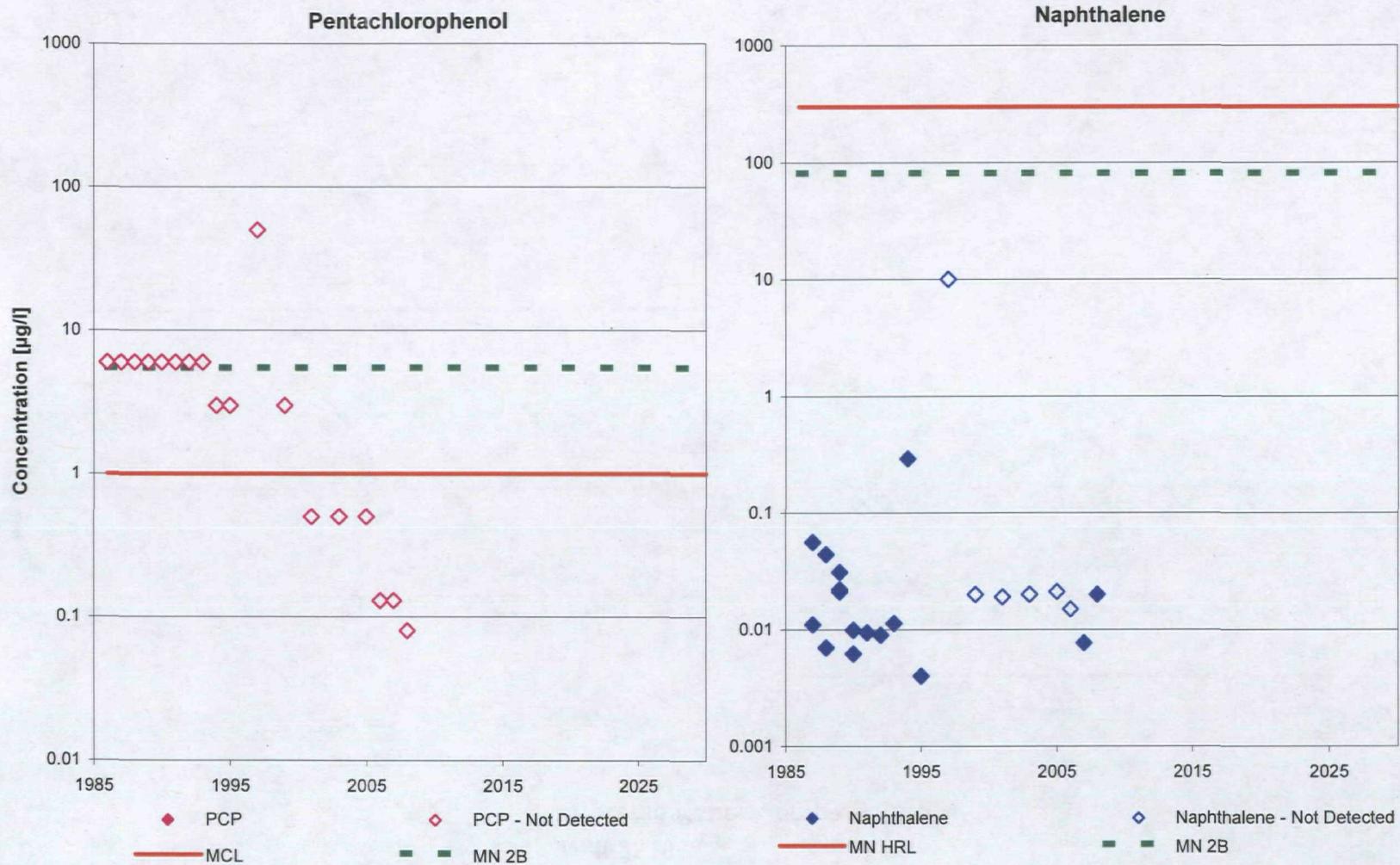
**Well 2238**  
**St. Regis Paper Company Site**



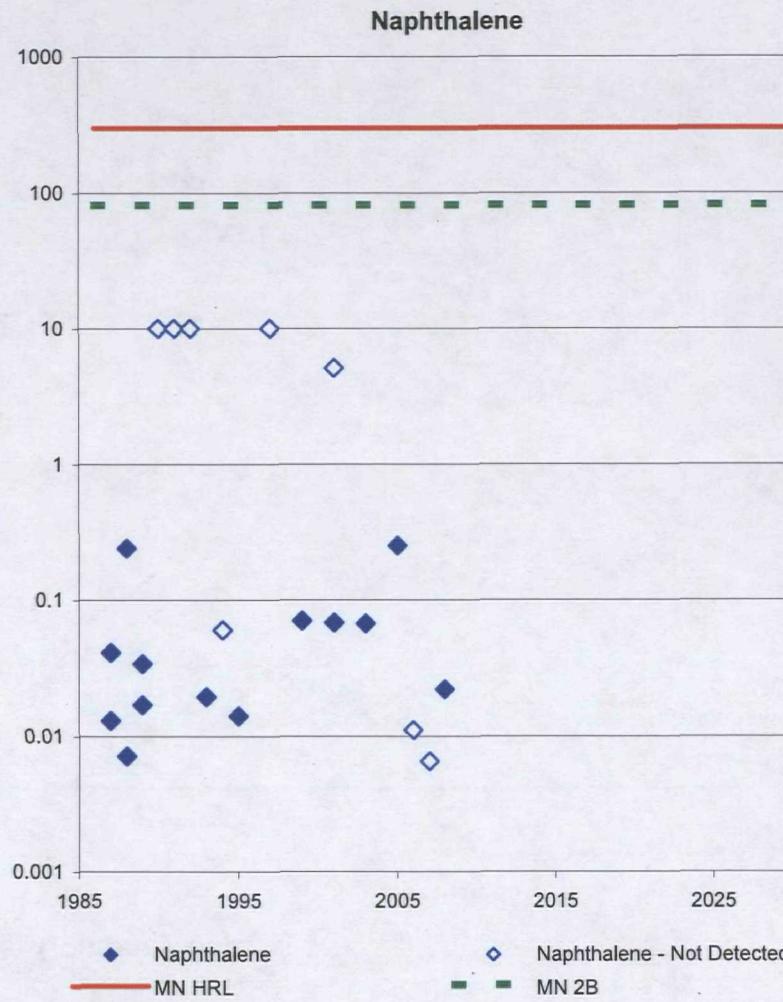
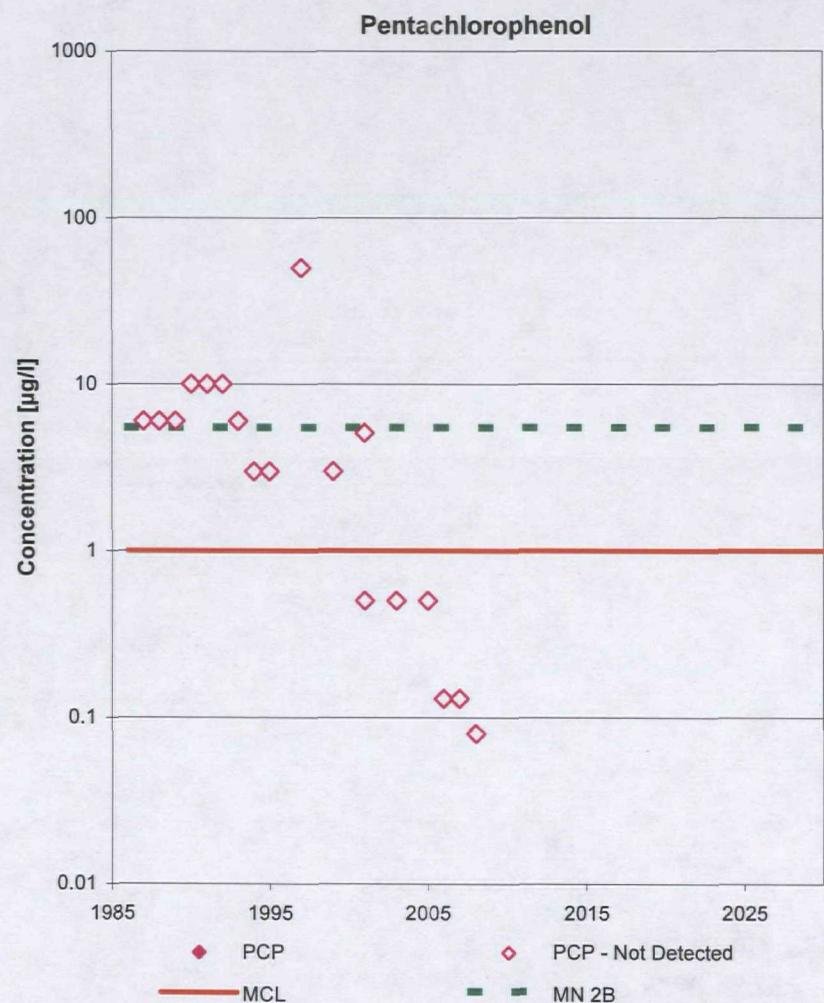
**Well 2301**  
**St. Regis Paper Company Site**



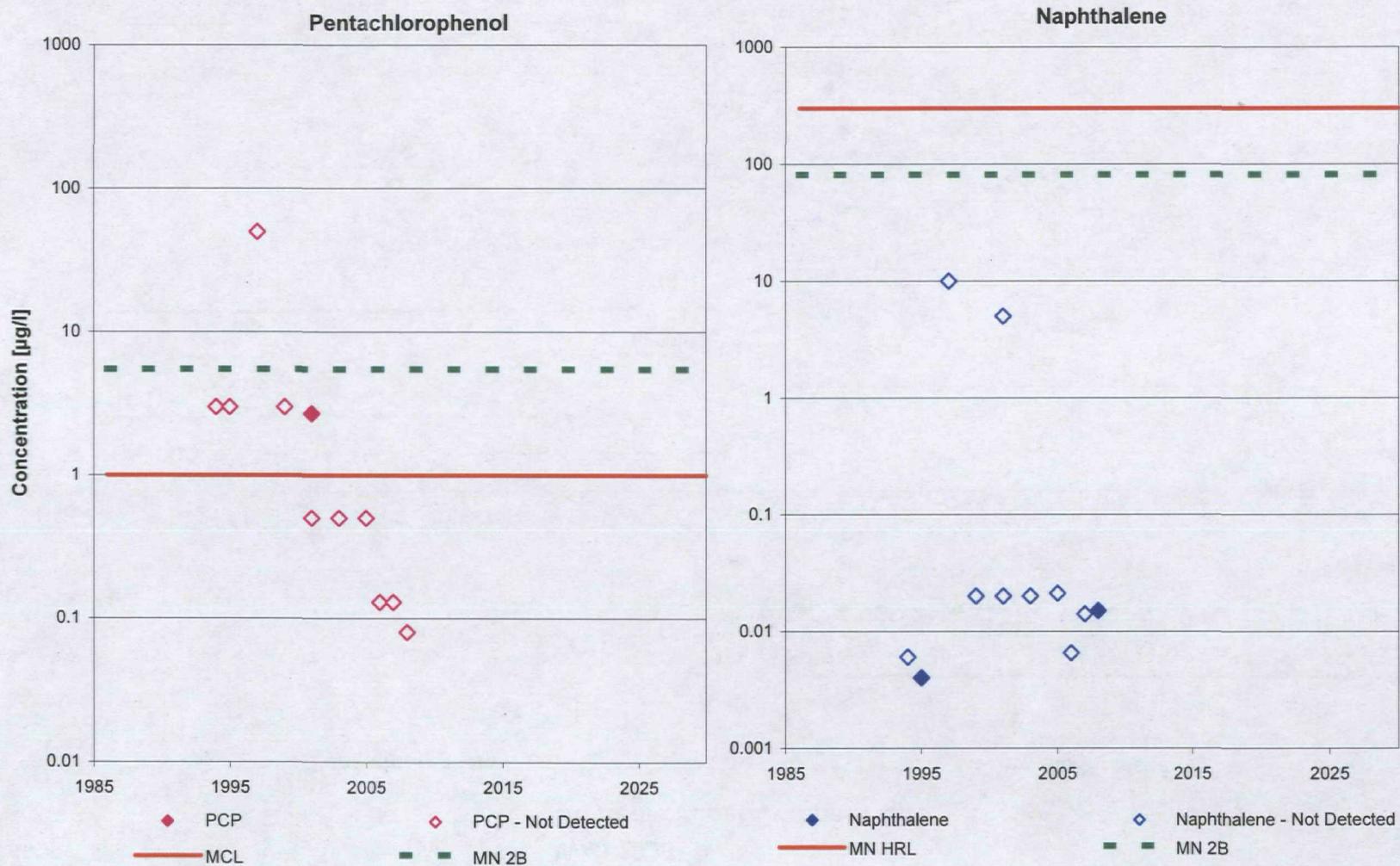
**Well 2325**  
**St. Regis Paper Company Site**



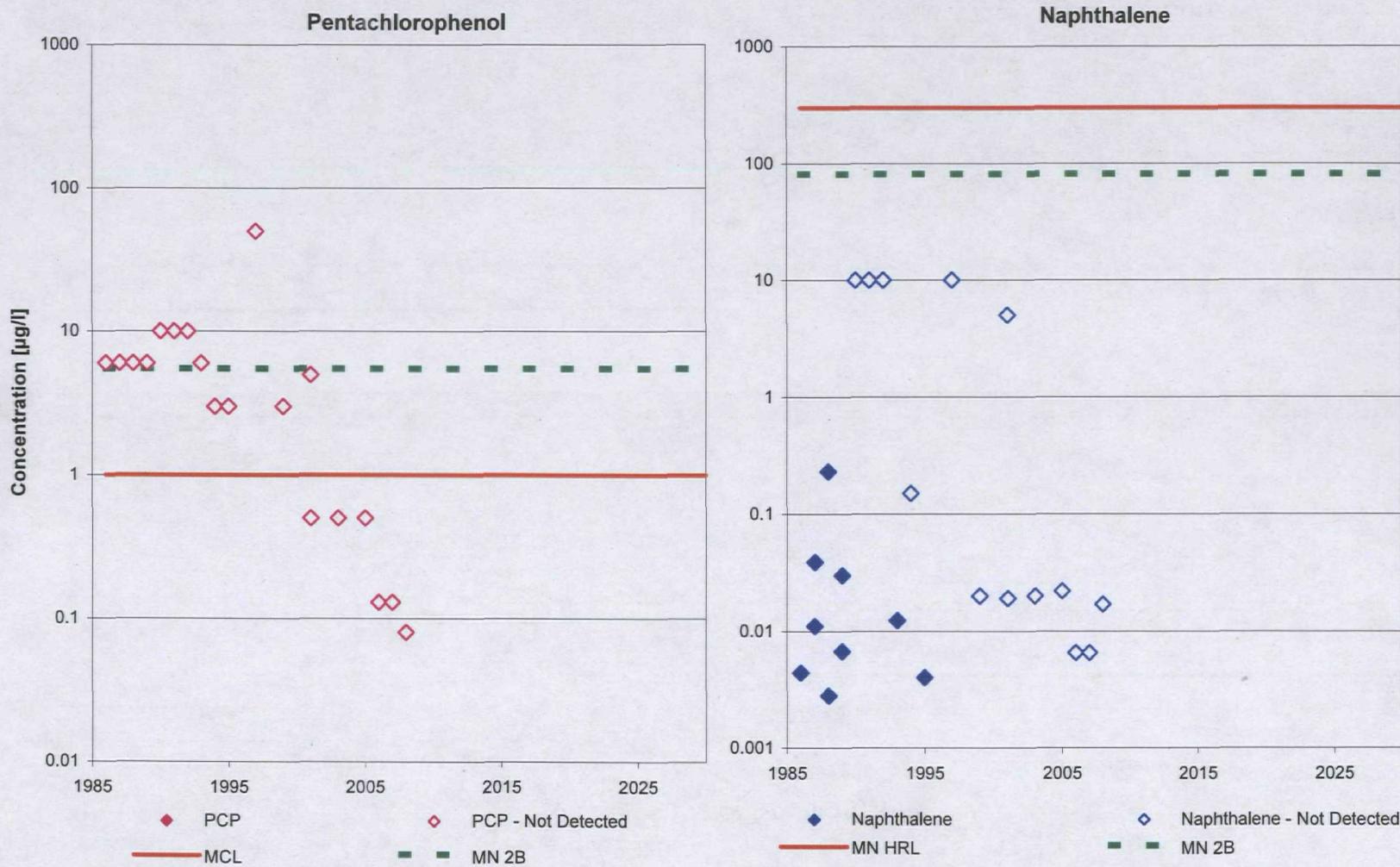
**Well 2326**  
**St. Regis Paper Company Site**



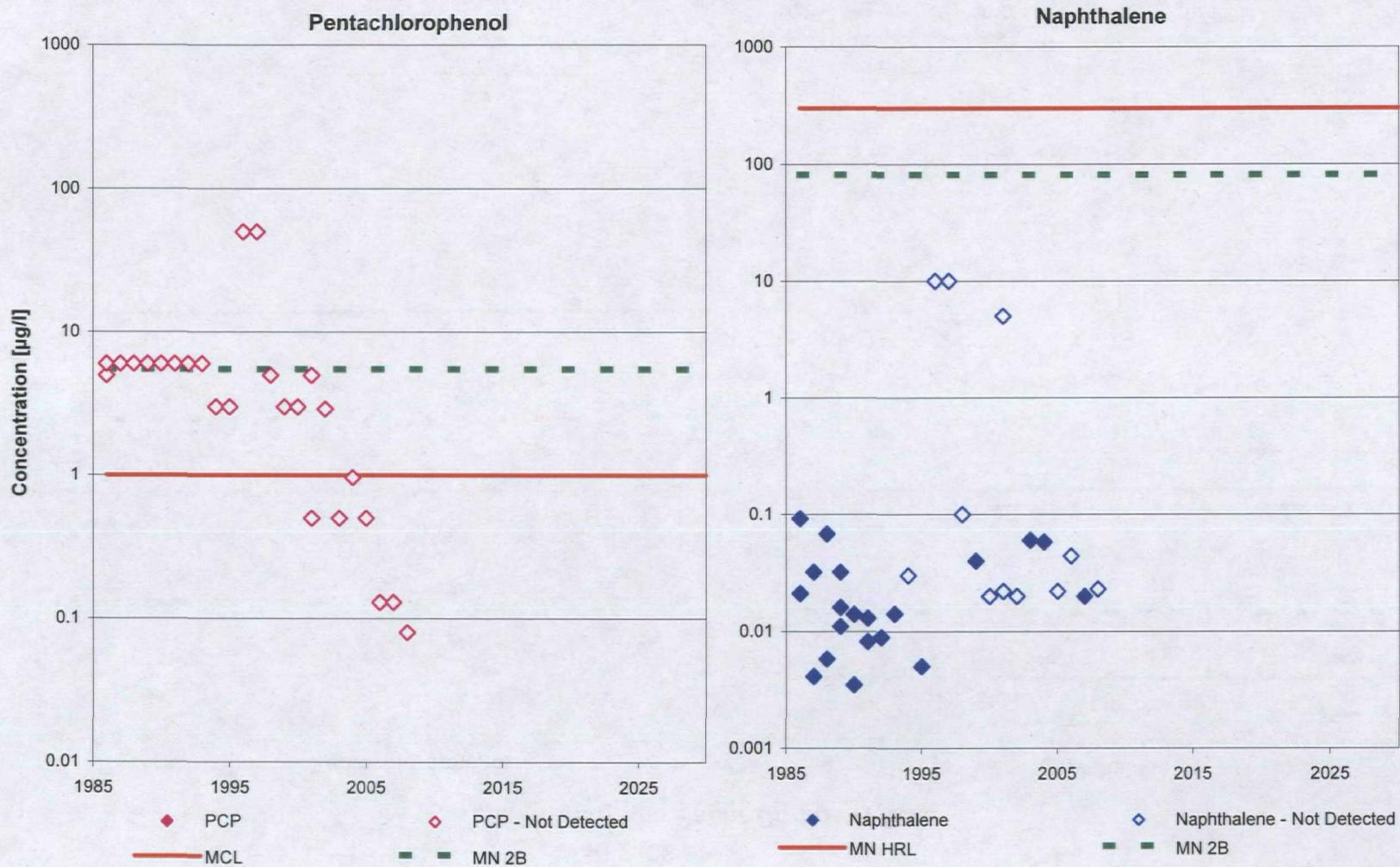
**Well 2329**  
**St. Regis Paper Company Site**



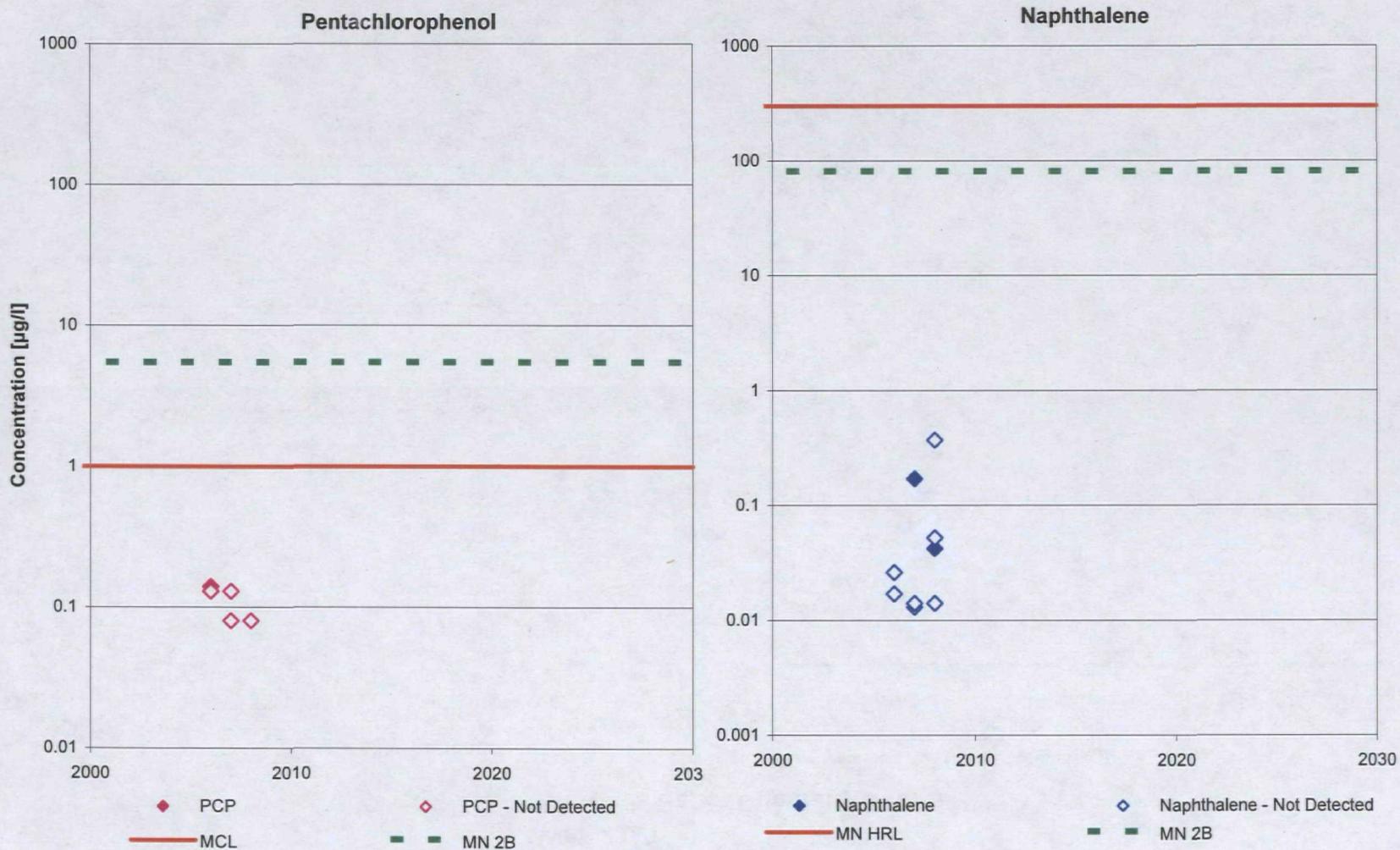
**Well 2333**  
**St. Regis Paper Company Site**



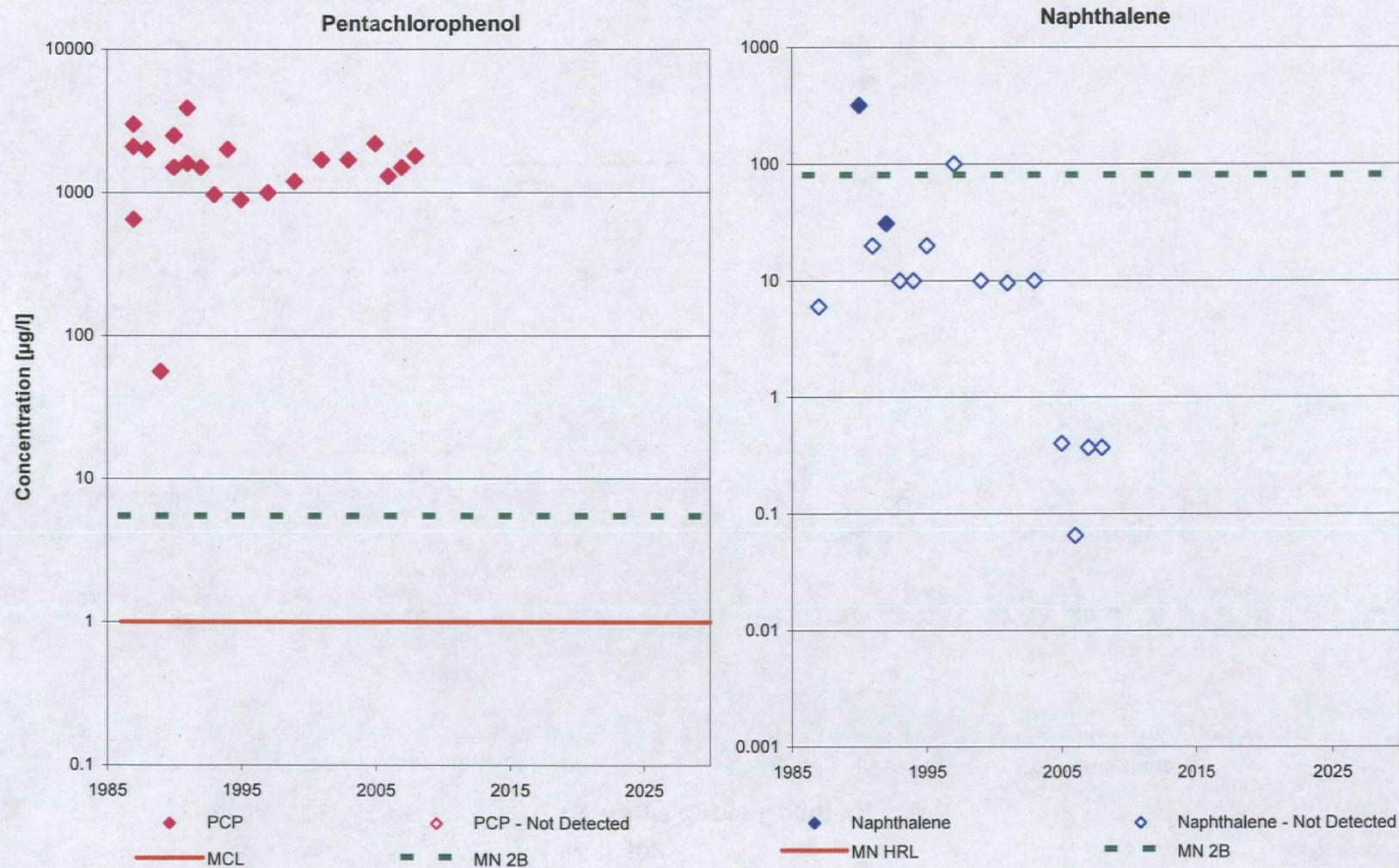
**Well 2335**  
**St. Regis Paper Company Site**



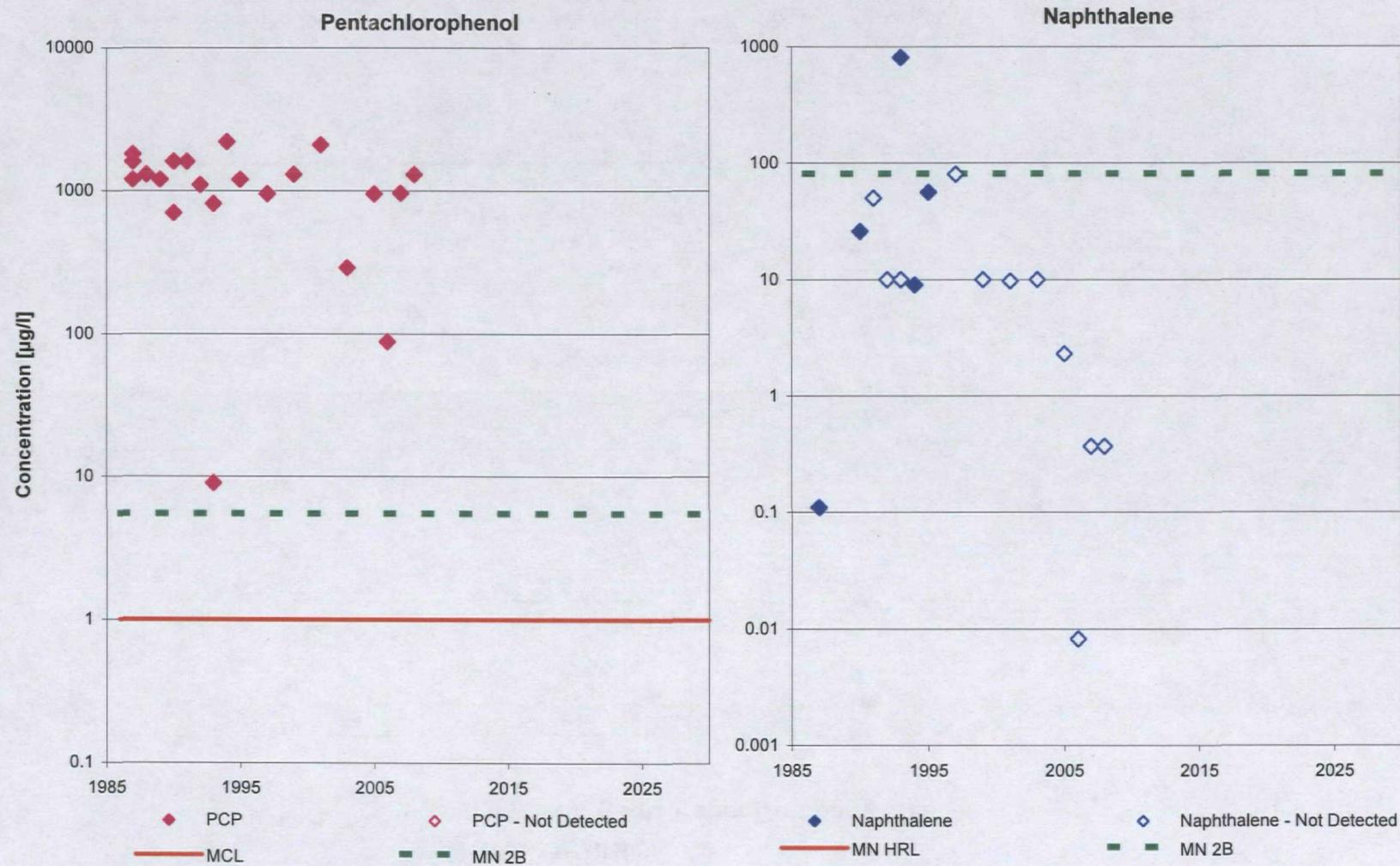
**Well 2336**  
**St. Regis Paper Company Site**



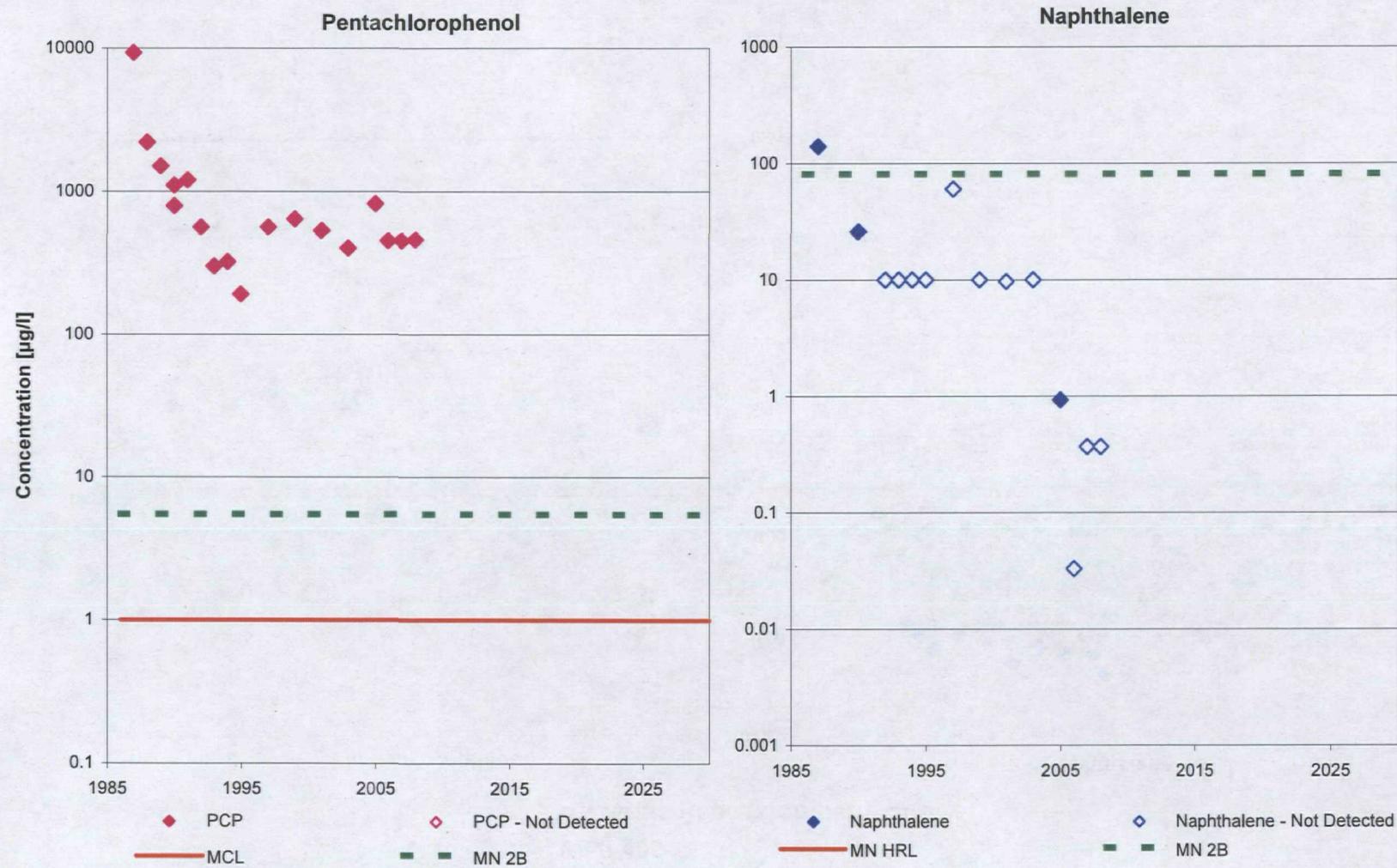
**Well 401**  
**St. Regis Paper Company Site**



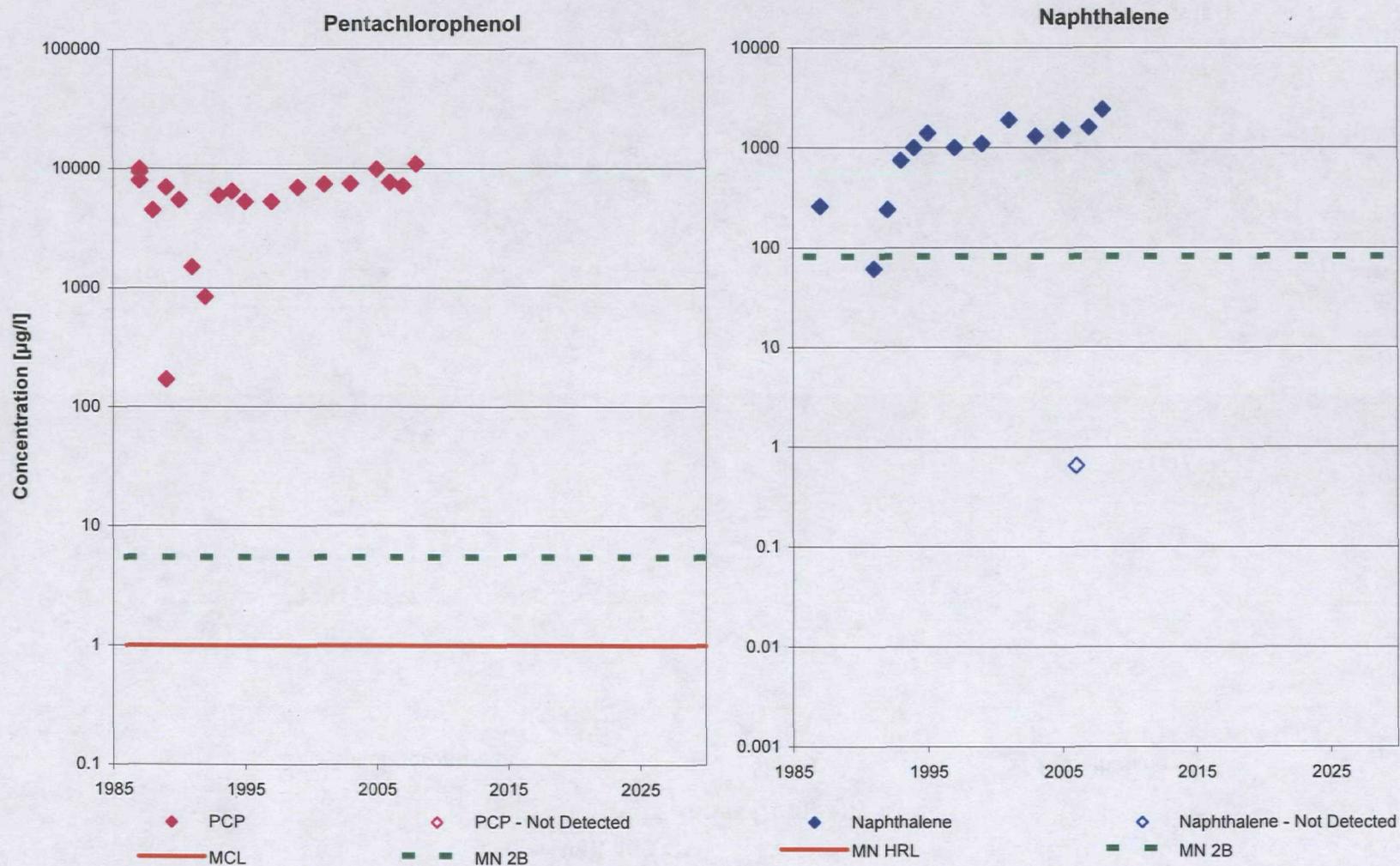
**Well 402**  
**St. Regis Paper Company Site**



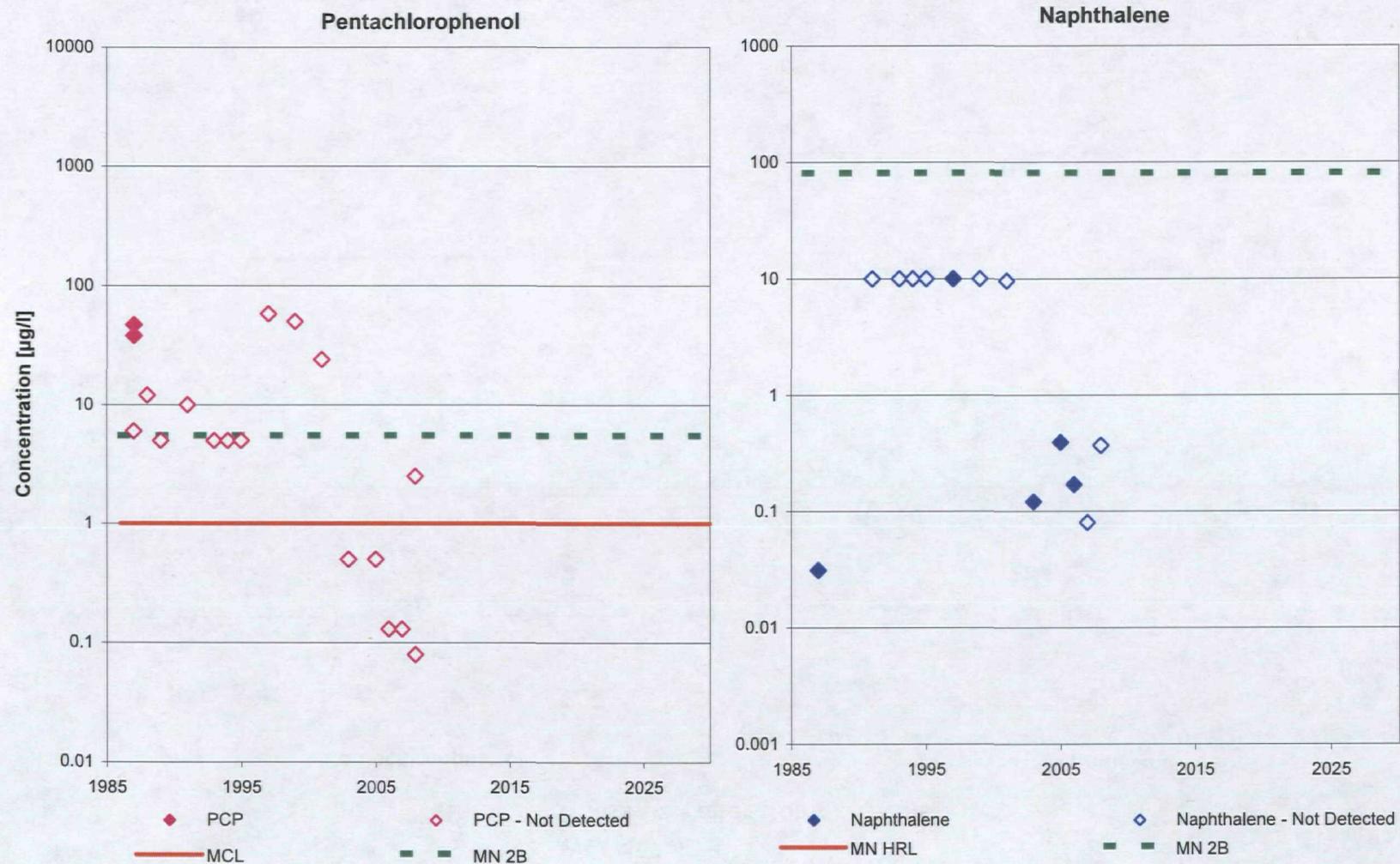
**Well 403**  
**St. Regis Paper Company Site**



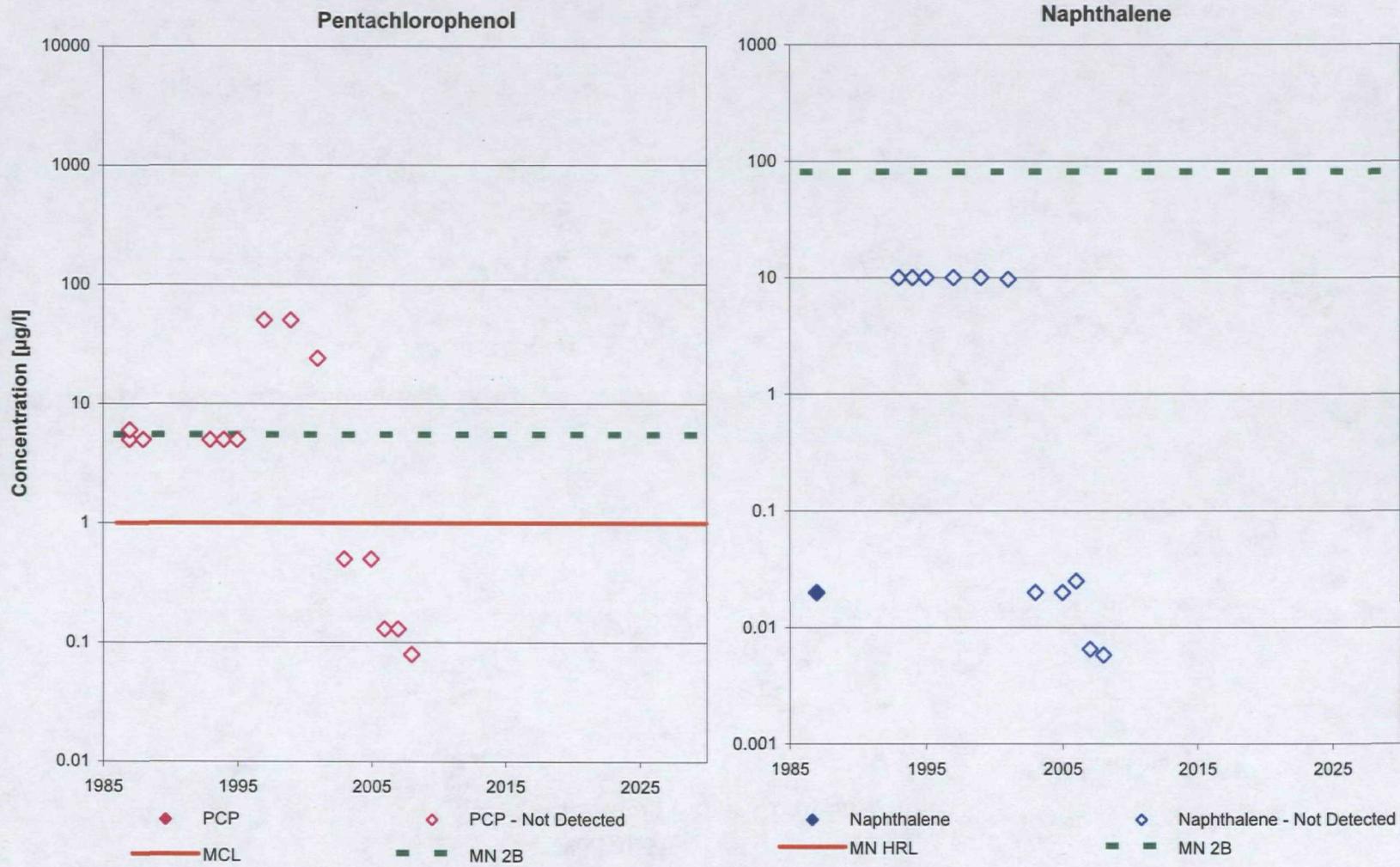
**Well 405**  
**St. Regis Paper Company Site**



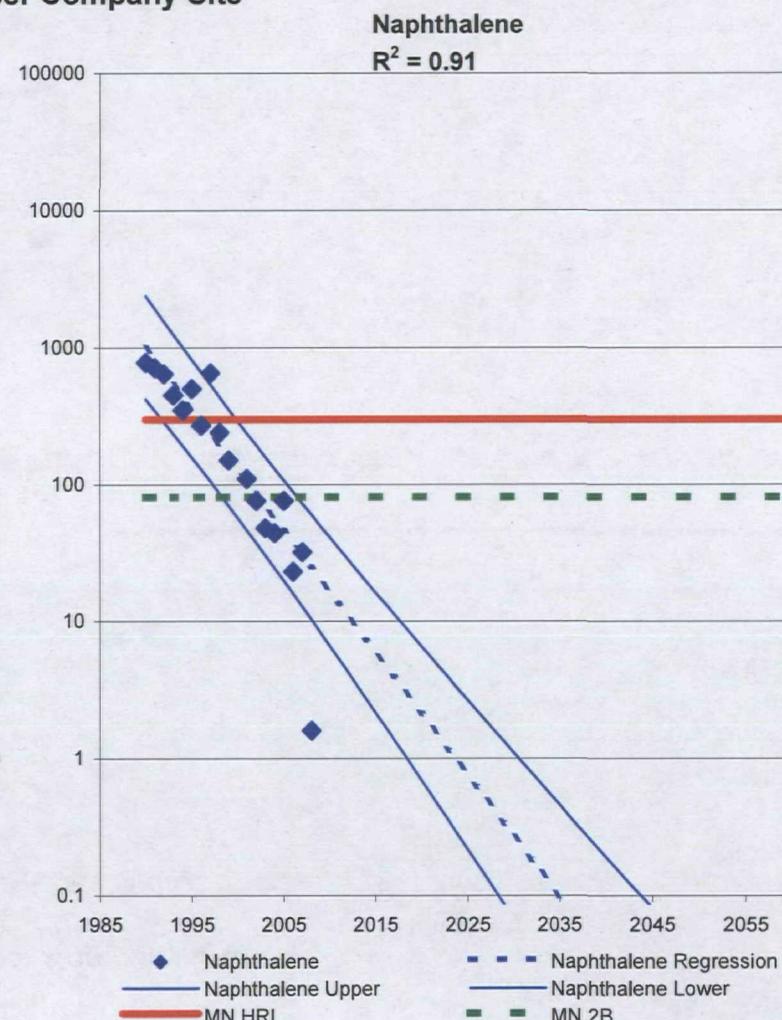
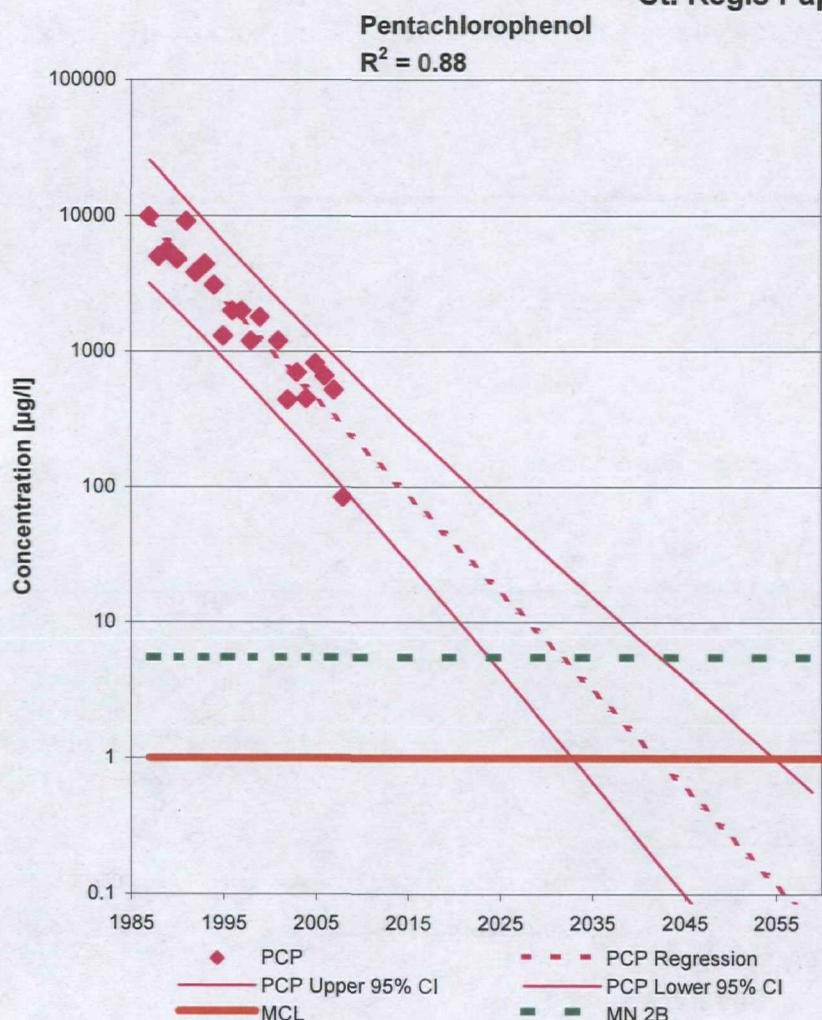
**Well 406**  
**St. Regis Paper Company Site**



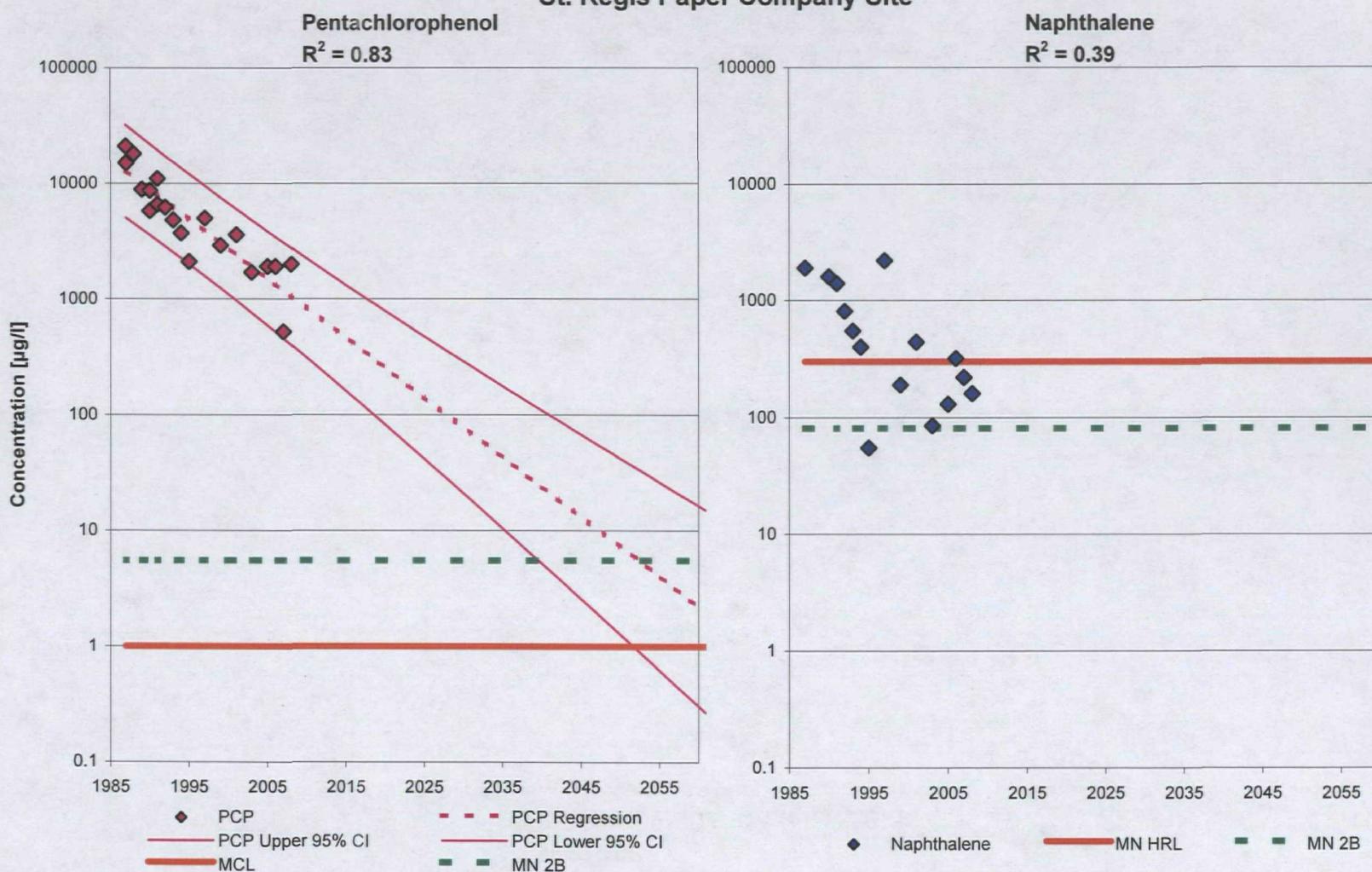
**Well 407**  
**St. Regis Paper Company Site**



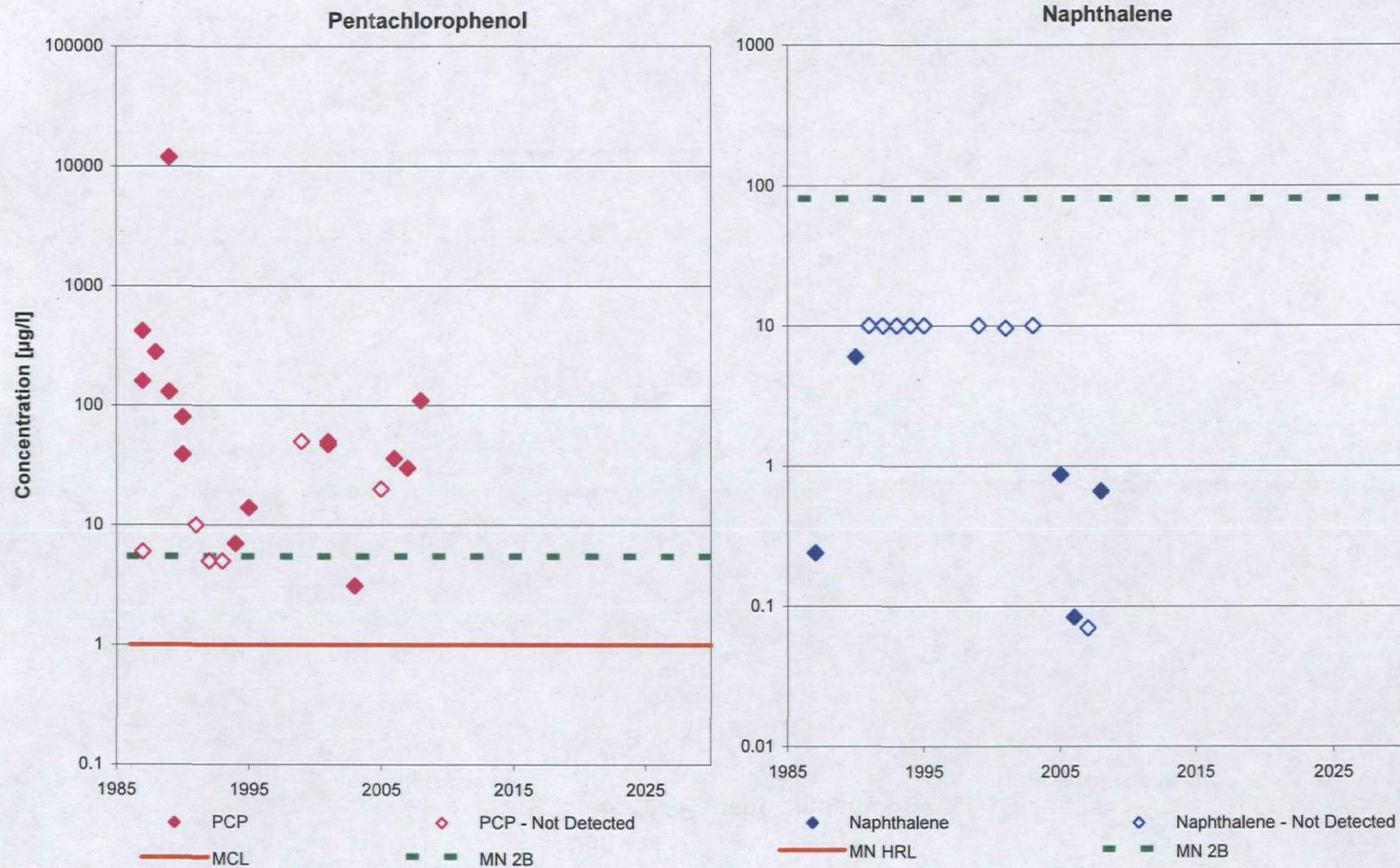
**Well 408**  
**St. Regis Paper Company Site**



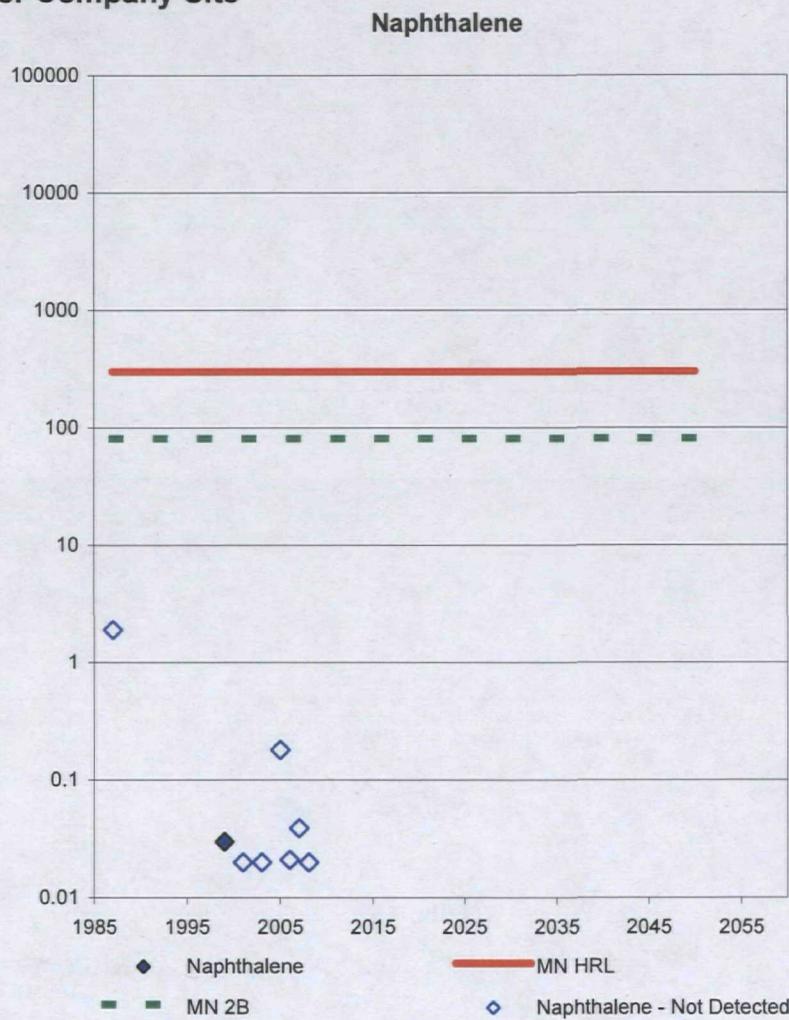
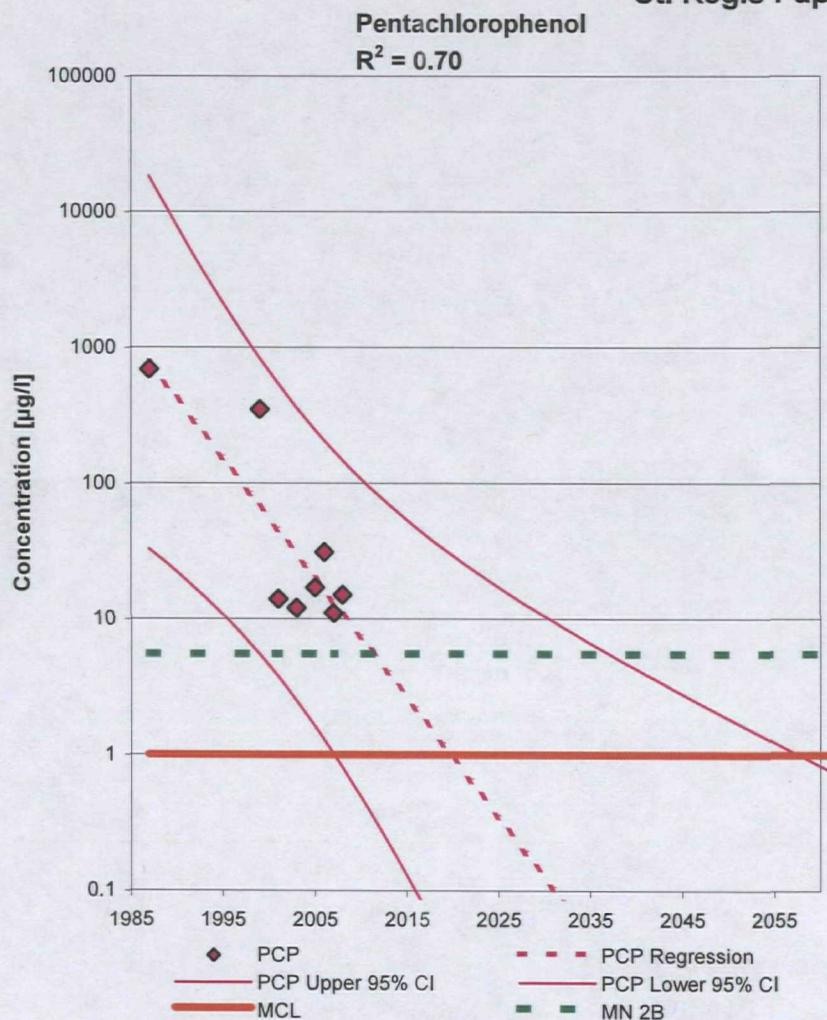
**Well 409**  
**St. Regis Paper Company Site**



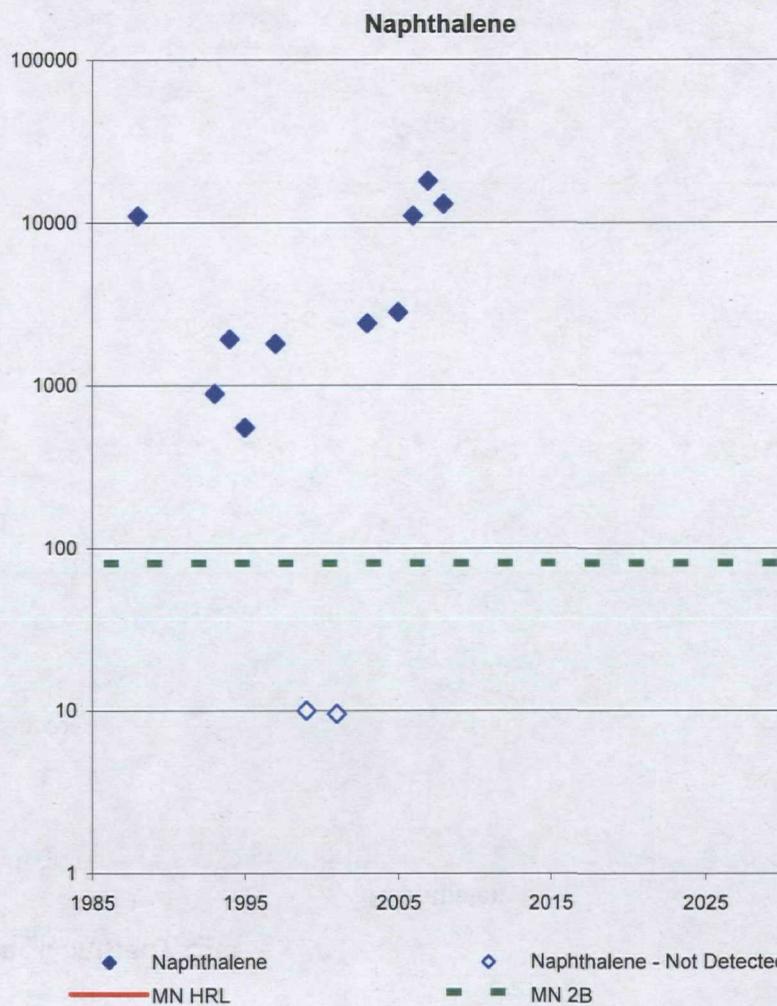
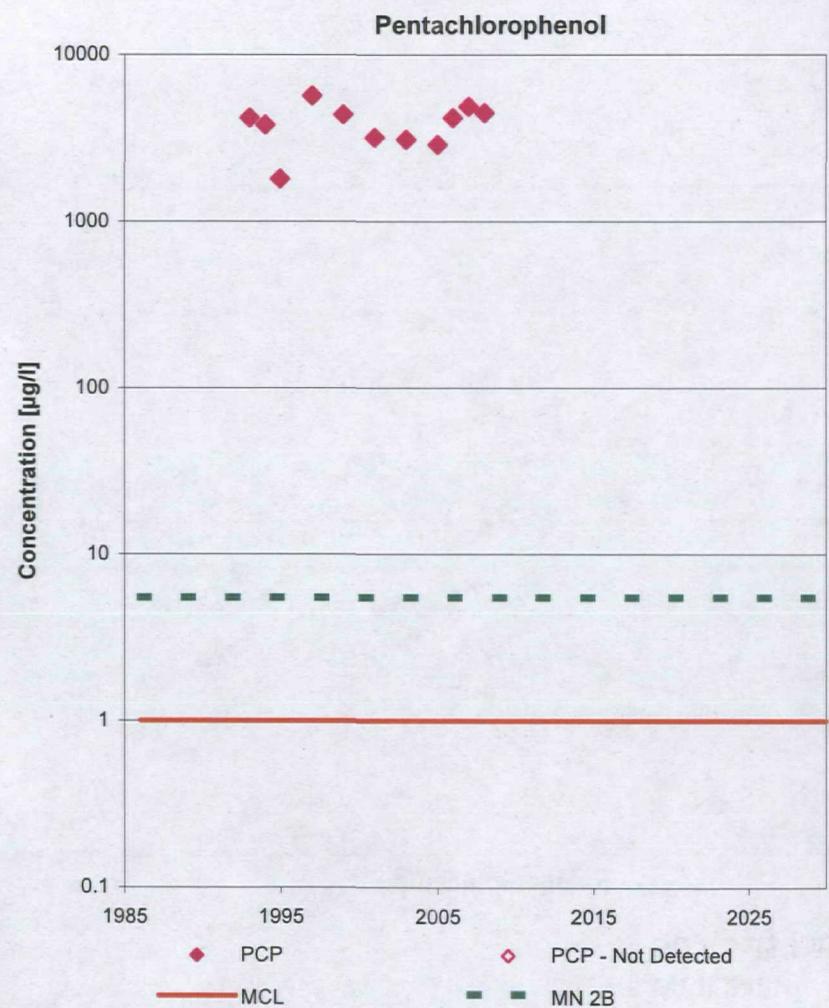
**Well 410**  
**St. Regis Paper Company Site**



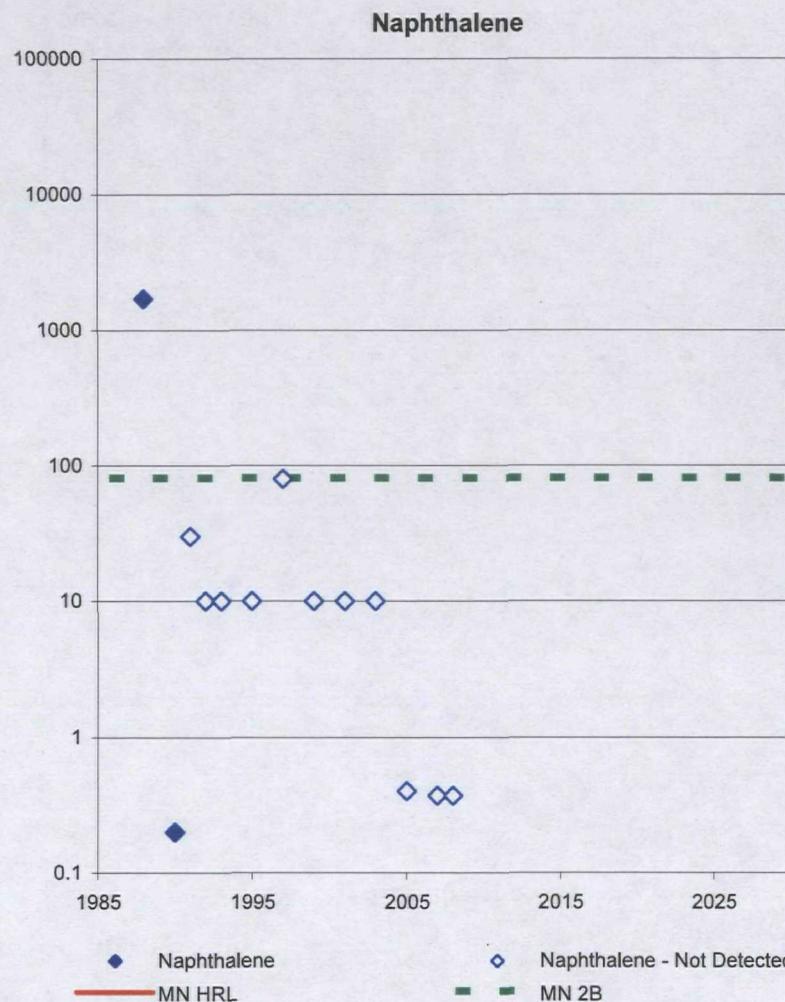
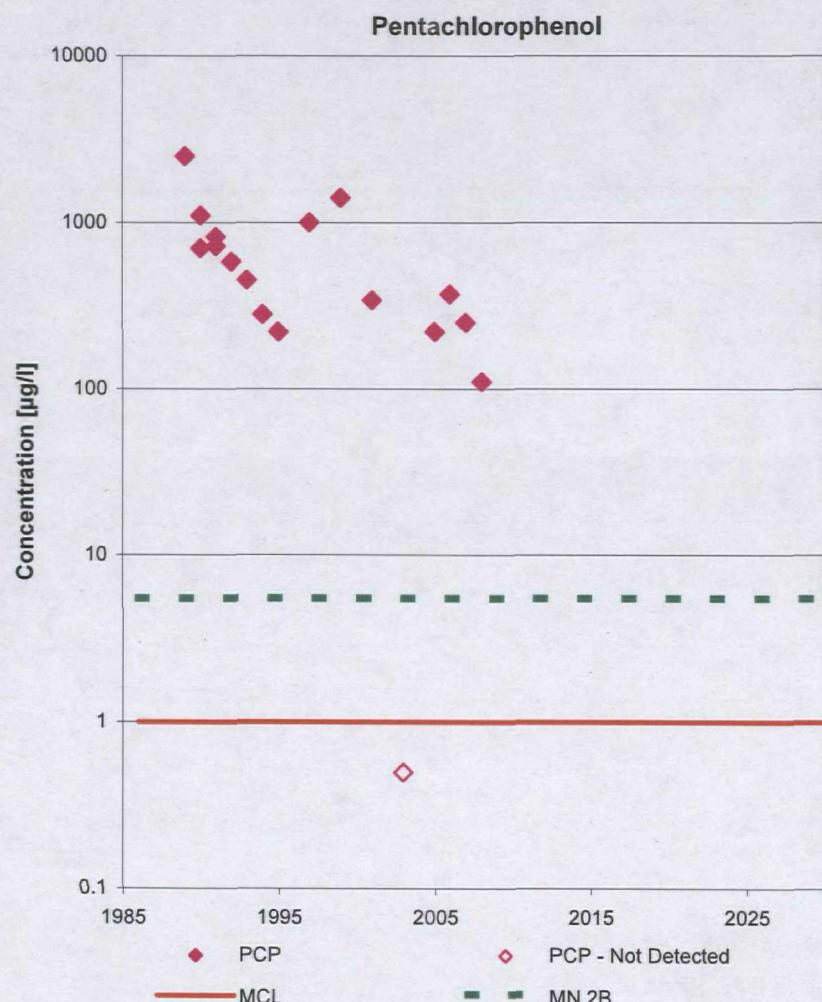
**Well 411**  
**St. Regis Paper Company Site**



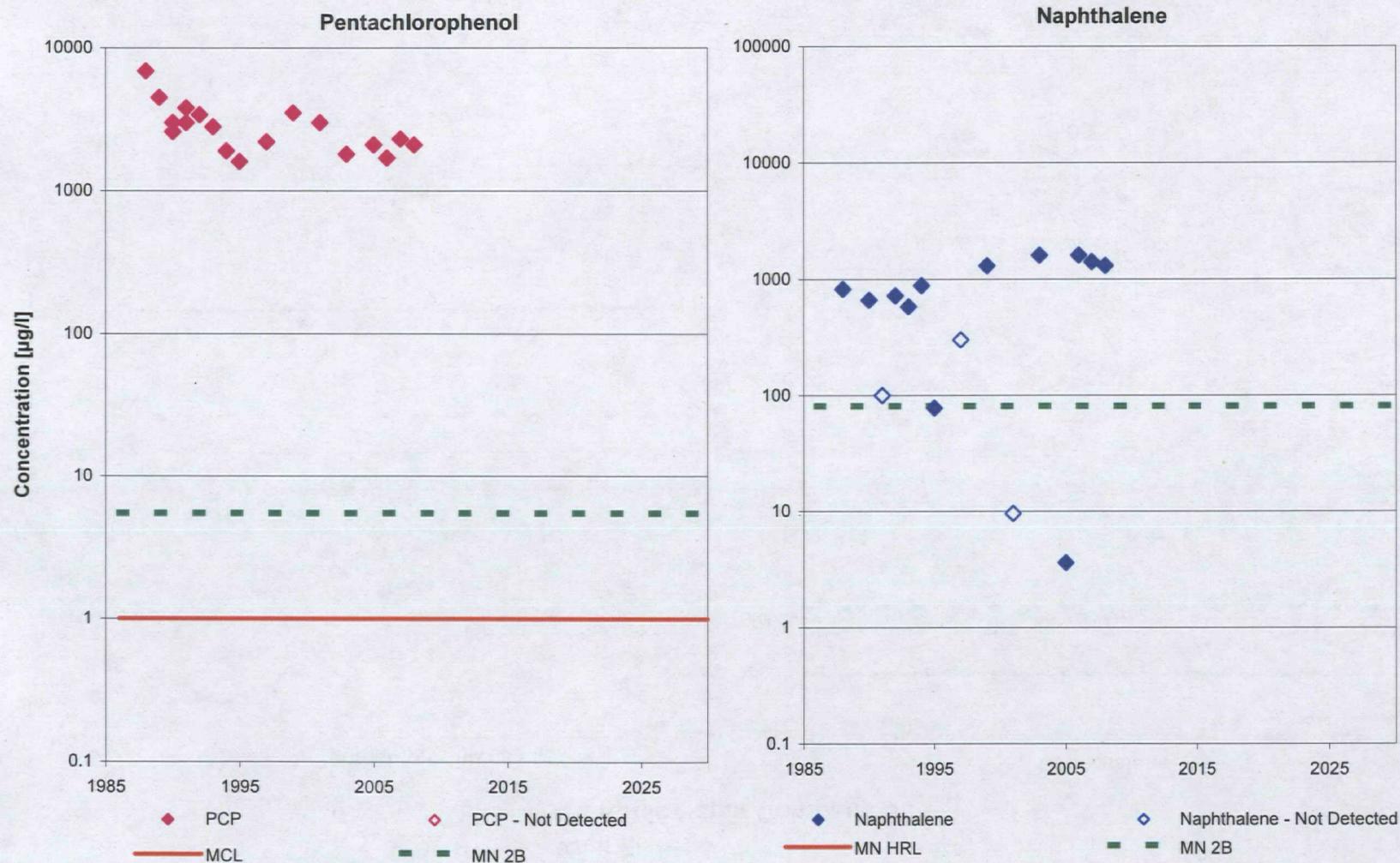
**Well 2401**  
**St. Regis Paper Company Site**



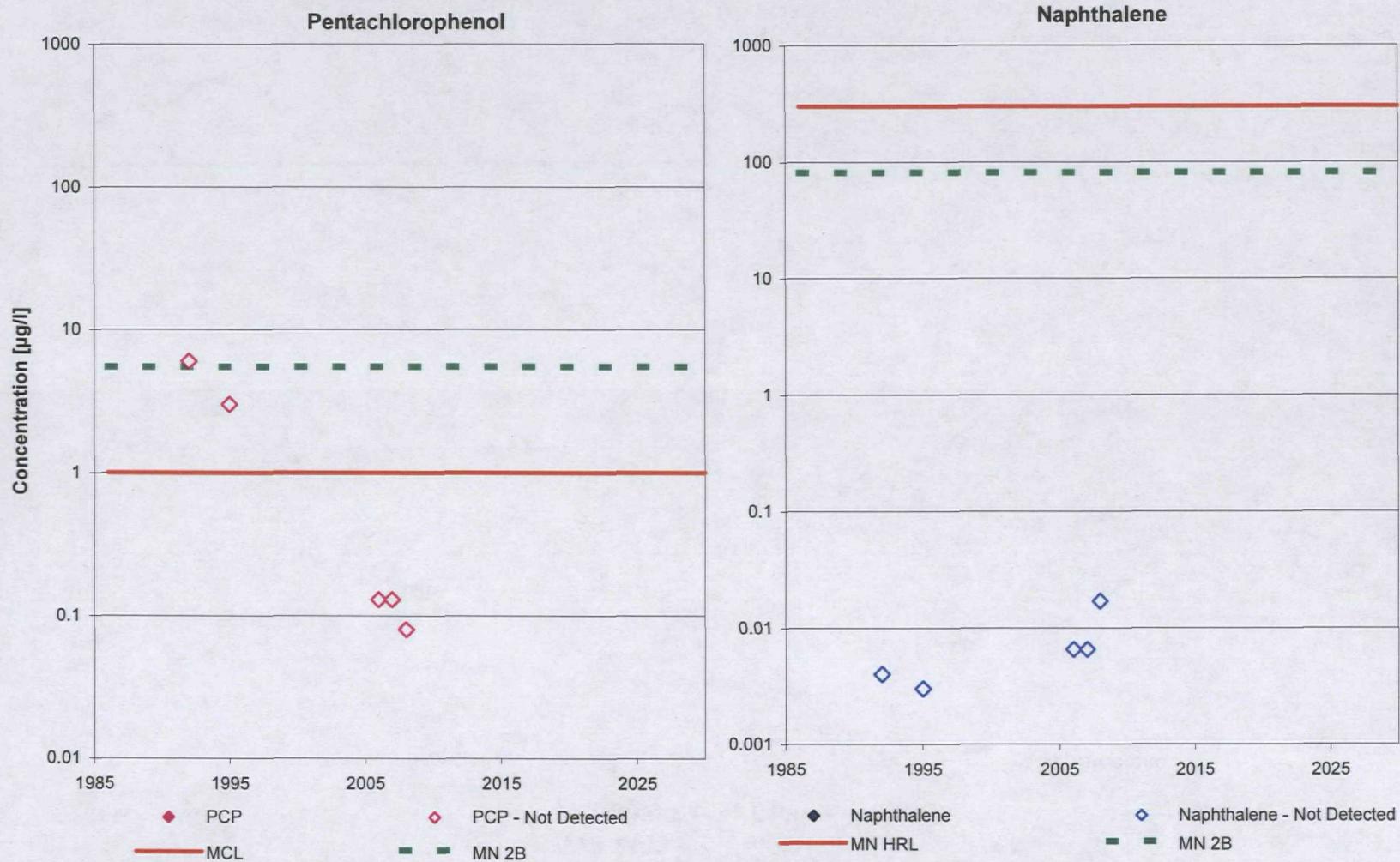
**Well 2402**  
**St. Regis Paper Company Site**



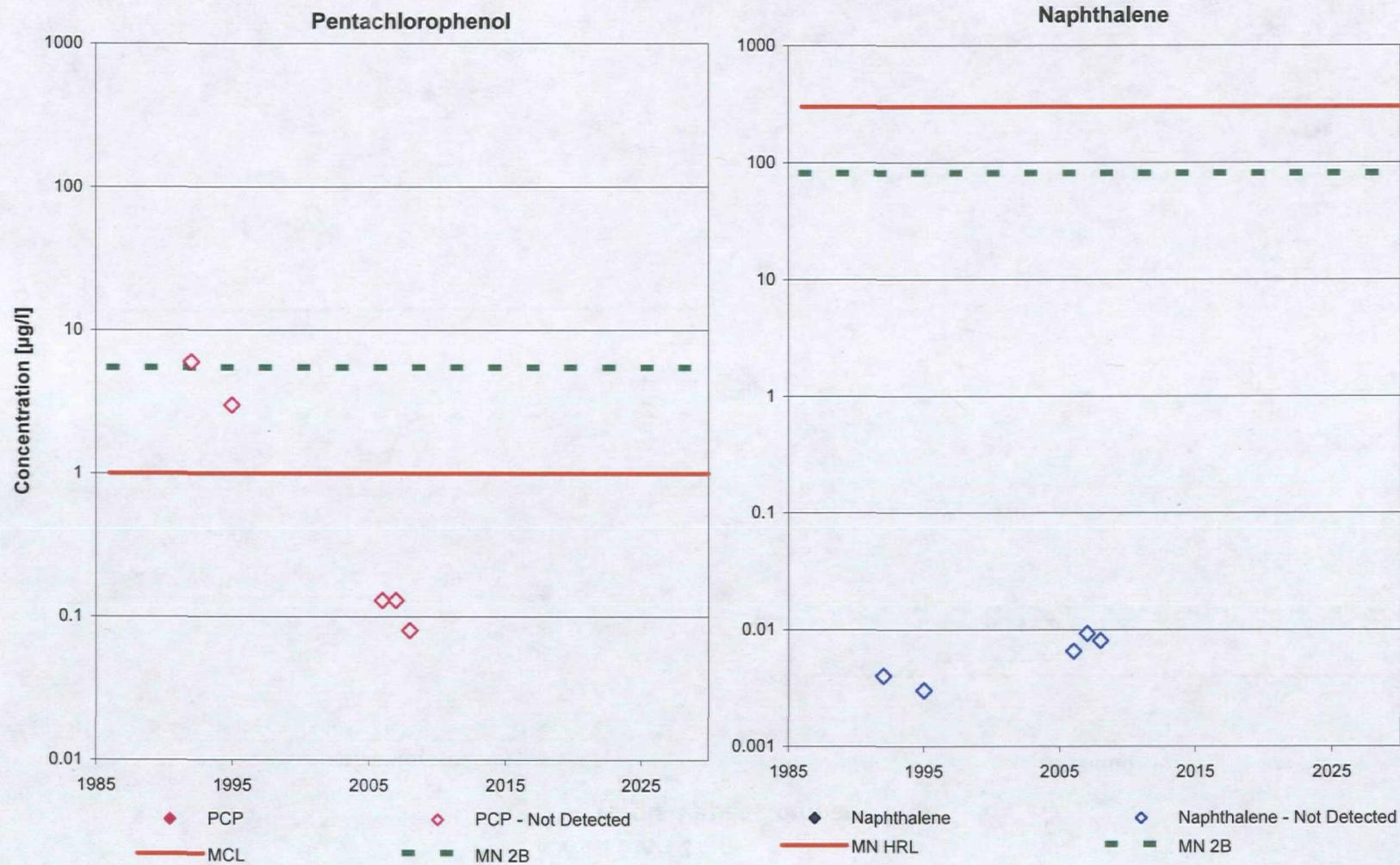
**Well 2403**  
**St. Regis Paper Company Site**



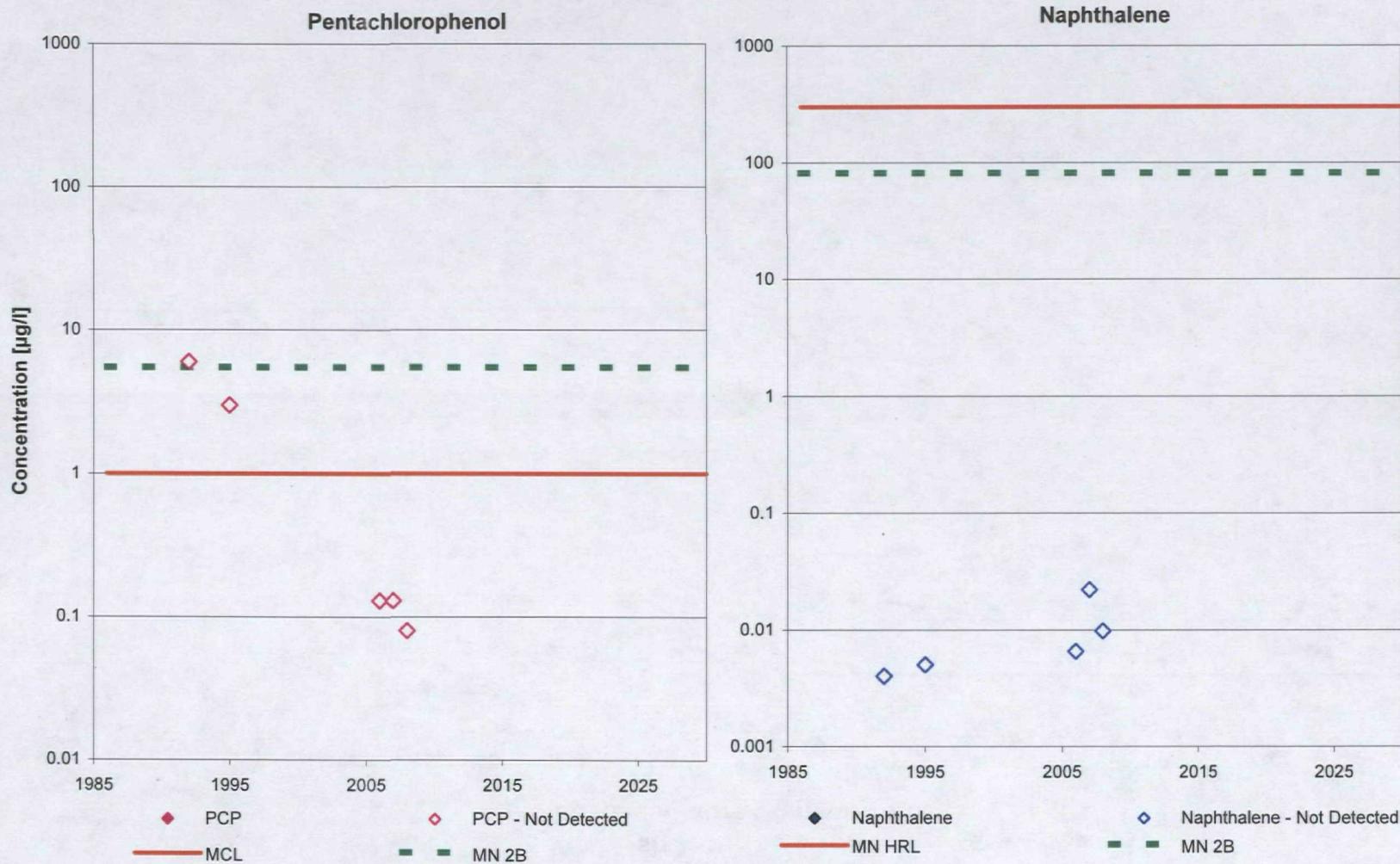
**Well Fish 1**  
**St. Regis Paper Company Site**



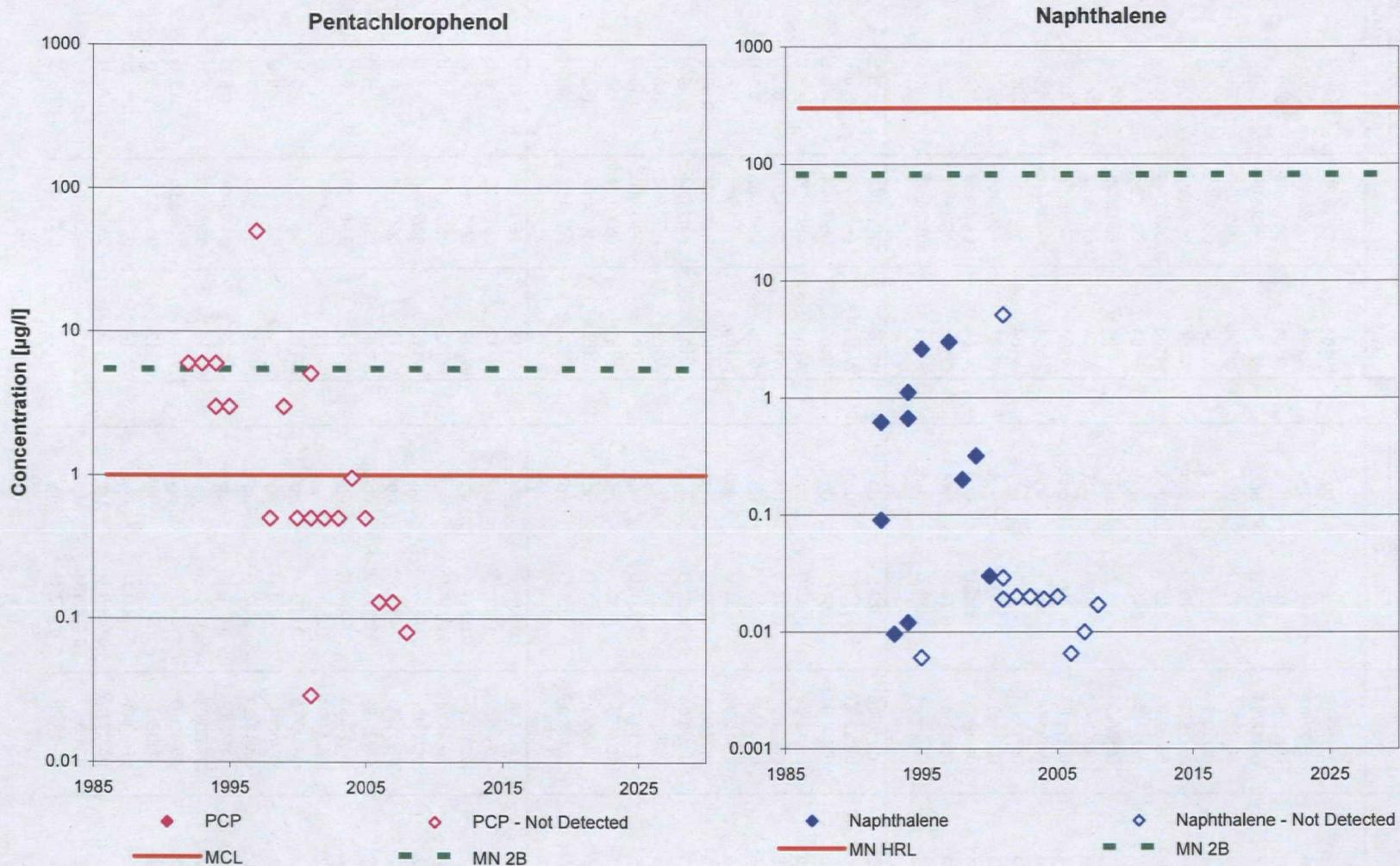
**Well Fish 2**  
**St. Regis Paper Company Site**



**Well Fish 3**  
**St. Regis Paper Company Site**



**Well Fish 4**  
**St. Regis Paper Company Site**



**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W104	12/19/86	1.7	ug/L		W104	12/19/86	670	ug/L	
	06/23/87	14	ug/L			06/23/87	1000	ug/L	
	06/29/88	28	ug/L			06/29/88	990	ug/L	
	06/28/89	10 U	ug/L			06/28/89	330	ug/L	
	06/27/90	10 U	ug/L			06/27/90	820	ug/L	
	06/19/91	10 U	ug/L			06/19/91	200	ug/L	
	05/28/92	10 U	ug/L			05/28/92	84	ug/L	
	06/02/93	0.288 U	ug/L			06/02/93	250	ug/L	
	06/14/94	0.244	ug/L			06/14/94	110	ug/L	
	06/08/95	3.8	ug/L			06/08/95	590	ug/L	
	06/06/97	80 U	ug/L			06/06/97	740	ug/L	
	05/18/99	0.94	ug/L			05/18/99	1000	ug/L	
	04/25/01	14	ug/L			04/25/01	2400	ug/L	
	05/11/03	30	ug/L			05/11/03	3200	ug/L	
	05/14/05	1.7	ug/L			05/14/05	310	ug/L	
	09/16/06	0.2 U	ug/L			09/16/06	670	ug/L	
	05/16/07	0.74	ug/L			05/16/07	290	ug/L	
	05/26/08	0.16 U	ug/L			05/26/08	220	ug/L	
W105	12/16/86	0.023	ug/L		W105	12/16/86	5 U	ug/L	
	07/22/93	0.0125	ug/L			06/02/93	6 U	ug/L	
	06/14/94	0.01	ug/L			06/14/94	3 U	ug/L	
	05/16/99	0.02 U	ug/L			05/16/99	3 U	ug/L	
	04/24/01	0.02 U	ug/L			04/24/01	0.5 U	ug/L	
	05/05/03	0.03	ug/L			05/05/03	0.5 U	ug/L	
	08/15/03	0.02 U	ug/L			08/15/03	0.5 U	ug/L	
	04/26/04	0.02 U	ug/L			04/26/04	0.96 U	ug/L	
	04/26/04	0.02 U	ug/L			04/26/04	0.96 U	ug/L	
	05/07/05	0.021 U	ug/L			05/07/05	0.5 U	ug/L	
	09/13/06	0.031 U	ug/L			09/13/06	0.13 U	ug/L	
	05/06/07	0.78	ug/L			05/06/07	36	ug/L	
	08/24/07	3 U	ug/L			08/24/07	140	ug/L	
	05/18/08	1.5 U	ug/L			05/18/08	66	ug/L	
W112	12/18/86	0.016	ug/L		W112	12/18/86	6 U	ug/L	
	06/24/87	0.026	ug/L			06/24/87	6 U	ug/L	
	06/28/88	0.0064	ug/L			06/28/88	6 U	ug/L	
	06/28/89	0.0038 U	ug/L			06/28/89	6 U	ug/L	
	06/27/90	0.0038	ug/L			06/27/90	6 U	ug/L	
	06/19/91	1.1	ug/L			06/19/91	6 U	ug/L	
	05/27/92	0.004 U	ug/L			05/27/92	6 U	ug/L	
	07/22/93	0.004 U	ug/L			06/02/93	6 U	ug/L	
	06/14/94	0.011	ug/L			06/14/94	3 U	ug/L	
	06/08/95	0.003	ug/L			06/08/95	3 U	ug/L	
	06/06/97	10 U	ug/L			06/06/97	50 U	ug/L	
	05/16/99	0.02 U	ug/L			05/16/99	3 U	ug/L	
	04/25/01	0.019 U	ug/L			04/25/01	0.5 U	ug/L	
	05/05/03	0.02 U	ug/L			05/05/03	0.5 U	ug/L	
	05/08/05	0.02 U	ug/L			05/08/05	0.5 U	ug/L	
	05/08/05	0.02 U	ug/L			05/08/05	0.5 U	ug/L	
	09/12/06	0.0066 U	ug/L			09/12/06	0.13 U*	ug/L	
	05/06/07	0.0065 U	ug/L			05/06/07	0.13 U	ug/L	
	05/06/07	0.0065 U	ug/L			05/06/07	0.13 U	ug/L	
	05/18/08	0.007 U	ug/L			05/18/08	0.08 U	ug/L	

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W114	12/16/86	0.017	ug/L		W114	12/16/86	5 U	ug/L	
W114	06/22/87	0.0093	ug/L		W114	06/22/87	6 U	ug/L	
W114	06/28/88	0.0067	ug/L		W114	06/28/88	6 U	ug/L	
W114	06/28/89	0.0086	ug/L		W114	06/28/89	6 U	ug/L	
W114	06/27/90	0.002	ug/L		W114	06/27/90	6 U	ug/L	
W114	06/19/91	0.0094	ug/L		W114	06/19/91	6 U	ug/L	
W114	05/27/92	0.008 U	ug/L		W114	05/27/92	6 U	ug/L	
W114	06/02/93	0.0121	ug/L		W114	06/02/93	6 U	ug/L	
W114	06/14/94	0.022	ug/L		W114	06/14/94	3 U	ug/L	
W114	06/08/95	0.004	ug/L		W114	06/08/95	3 U	ug/L	
W114	06/04/96	10 U	ug/L		W114	06/04/96	50 U	ug/L	
W114	06/06/97	10 U	ug/L		W114	06/06/97	50 U	ug/L	
W114	04/29/98	0.1 U	ug/L		W114	04/29/98	5 U	ug/L	
W114	05/16/99	0.02 U	ug/L		W114	05/16/99	3 U	ug/L	
W114	04/04/00	0.02 U	ug/L		W114	04/04/00	3 U	ug/L	
W114	04/25/01	0.019 U	ug/L		W114	04/25/01	0.5 U	ug/L	
W114	05/02/02	0.02 U	ug/L		W114	05/02/02	3 U	ug/L	
W114	05/05/03	0.02 U	ug/L		W114	05/05/03	0.5 U	ug/L	
W114	04/25/04	0.02 U	ug/L		W114	04/25/04	0.96 U	ug/L	
W114	05/07/05	0.021 U	ug/L		W114	05/07/05	0.5 U	ug/L	
W114	09/13/06	0.0078 U	ug/L		W114	09/13/06	0.13 U	ug/L	
W114	05/06/07	0.0065 U	ug/L		W114	05/06/07	0.13 U	ug/L	
W114	05/18/08	0.011 U	ug/L		W114	05/18/08	0.08 U	ug/L	
W115	06/23/87	0.012	ug/L		W115	06/23/87	6 U	ug/L	
W115	06/28/88	0.0074	ug/L		W115	06/28/88	6 U	ug/L	
W115	06/28/89	0.0064	ug/L		W115	06/28/89	6 U	ug/L	
W115	06/27/90	0.0019 U	ug/L		W115	06/27/90	6 U	ug/L	
W115	06/19/91	0.011	ug/L		W115	06/19/91	6 U	ug/L	
W115	05/27/92	0.0086	ug/L		W115	05/27/92	6 U	ug/L	
W115	06/02/93	0.0113	ug/L		W115	06/02/93	6 U	ug/L	
W115	06/14/94	0.011	ug/L		W115	06/14/94	3 U	ug/L	
W115	06/06/95	0.003	ug/L		W115	06/06/95	3 U	ug/L	
W115	06/04/96	10 U	ug/L		W115	06/04/96	50 U	ug/L	
W115	06/06/97	10 U	ug/L		W115	06/06/97	50 U	ug/L	
W115	04/29/98	0.1 U	ug/L		W115	04/29/98	5 U	ug/L	
W115	05/16/99	0.02 U	ug/L		W115	05/16/99	3 U	ug/L	
W115	04/04/00	0.02 U	ug/L		W115	04/04/00	3 U	ug/L	
W115	04/24/01	0.019 U	ug/L		W115	04/24/01	0.5 U	ug/L	
W115	05/05/02	0.021 U	ug/L		W115	05/05/02	3.1 U	ug/L	
W115	05/05/03	0.02 U	ug/L		W115	05/05/03	0.5 U	ug/L	
W115	04/25/04	0.02 U	ug/L		W115	04/25/04	0.96 U	ug/L	
W115	05/07/05	0.022 U	ug/L		W115	05/07/05	0.5 U	ug/L	
W115	09/14/06	0.009 U	ug/L		W115	09/14/06	0.13 U	ug/L	
W115	05/06/07	0.0067 U	ug/L		W115	05/06/07	0.13 U	ug/L	
W115	05/19/08	0.013 U	ug/L		W115	05/18/08	0.08 U	ug/L	
W205	12/18/86	0.013	ug/L		W205	12/18/86	6 U	ug/L	
W205	07/22/93	0.0113	ug/L		W205	06/02/93	6 U	ug/L	
W205	06/14/94	0.12 U	ug/L		W205	06/14/94	3 U	ug/L	
W205	05/16/99	0.02 U	ug/L		W205	05/16/99	3 U	ug/L	
W205	04/24/01	0.019 U	ug/L		W205	04/24/01	0.5 U	ug/L	
W205	05/05/03	0.02 U	ug/L		W205	05/05/03	0.5 U	ug/L	

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W205	05/07/05	0.02	U	ug/L	W205	05/07/05	0.5	U	ug/L
	09/13/06	0.0078	U	ug/L		09/13/06	0.13	U	ug/L
	05/06/07	0.0065	U	ug/L		05/06/07	0.13	U	ug/L
	05/18/08	0.041	U	ug/L		05/18/08	0.08	U	ug/L
W209	12/19/86	0.075		ug/L	W209	12/19/86	6	U	ug/L
	05/16/99	0.02	U	ug/L		05/16/99	3	U	ug/L
	04/24/01	0.019	U	ug/L		04/24/01	0.5	U	ug/L
	05/05/03	0.02	U	ug/L		05/05/03	0.5	U	ug/L
	05/07/05	0.022	U	ug/L		05/07/05	0.5	U	ug/L
	09/13/06	0.0088	U	ug/L		09/13/06	0.13	U	ug/L
	05/05/07	0.0065	U	ug/L		05/05/07	0.13	U	ug/L
	05/19/08	0.011	U	ug/L		05/19/08	0.08	U	ug/L
W212	12/19/86	980		ug/L	W212	12/19/86	8900		ug/L
	06/23/87	740		ug/L		06/23/87	4000		ug/L
	06/29/88	550		ug/L		06/29/88	3800		ug/L
	06/28/89	230		ug/L		06/28/89	3500		ug/L
	06/27/90	52		ug/L		06/27/90	5100		ug/L
	06/19/91	28		ug/L		06/19/91	2200		ug/L
	05/28/92	150	U	ug/L		05/28/92	2200		ug/L
	06/02/93	13		ug/L		06/02/93	2900		ug/L
	06/14/94	10		ug/L		06/14/94	3900		ug/L
	06/08/95	750	U	ug/L		06/08/95	2300		ug/L
	06/04/96	5		ug/L		06/04/96	1300		ug/L
	06/06/97	70	U	ug/L		06/06/97	950		ug/L
	04/29/98	1.6		ug/L		04/29/98	470		ug/L
	05/16/99	2.4		ug/L		05/16/99	430		ug/L
	04/04/00	2.8		ug/L		04/04/00	69		ug/L
	04/25/01	3.1		ug/L		04/25/01	110		ug/L
	05/05/02	1.1		ug/L		05/05/02	19		ug/L
	05/10/03	1.6		ug/L		05/10/03	45		ug/L
	05/10/03	1.4		ug/L		05/10/03	45		ug/L
	04/25/04	1.8		ug/L		04/25/04	4.6		ug/L
	05/15/05	1.8		ug/L		05/15/05	46		ug/L
	05/15/05	1.7		ug/L		05/15/05	46		ug/L
	09/16/06	1.7		ug/L		09/16/06	17		ug/L
	12/06/06	0.63		ug/L		12/06/06	20		ug/L
	02/28/07	2.5		ug/L		02/28/07	10		ug/L
	05/16/07	1		ug/L		05/16/07	15		ug/L
	08/23/07	1		ug/L		08/23/07	9.3		ug/L
	10/31/07	1.7		ug/L		10/31/07	10		ug/L
	03/27/08	0.65		ug/L		03/27/08	25		ug/L
	05/26/08	0.9		ug/L		05/26/08	23		ug/L
	08/22/08	0.022	U	ug/L		08/22/08	110		ug/L
	11/20/08	0.49		ug/L		11/20/08	16		ug/L
W213	12/19/86	1300		ug/L	W213	12/19/86	20000		ug/L
	06/23/87	1100		ug/L		06/23/87	12000		ug/L
	06/29/88	1200		ug/L		06/29/88	4800		ug/L
	06/28/89	1000		ug/L		06/28/89	12000		ug/L
	06/27/90	470		ug/L		06/27/90	5800		ug/L
	06/19/91	810		ug/L		06/19/91	830		ug/L
	05/28/92	150		ug/L		05/28/92	300		ug/L

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W213	06/02/93	170	ug/L		W213	06/02/93	10 U	ug/L	
W213	06/14/94	130	ug/L		W213	06/14/94	20 U	ug/L	
W213	06/08/95	67	ug/L		W213	06/08/95	10 U	ug/L	
W213	06/04/96	47	ug/L		W213	06/04/96	50 U	ug/L	
W213	06/06/97	36	ug/L		W213	06/06/97	50 U	ug/L	
W213	04/29/98	21	ug/L		W213	04/29/98	3	ug/L	
W213	05/16/99	22	ug/L		W213	05/16/99	3 U	ug/L	
W213	04/04/00	470	ug/L		W213	04/04/00	1900	ug/L	
W213	04/25/01	64	ug/L		W213	04/25/01	0.5 U	ug/L	
W213	05/05/02	36	ug/L		W213	05/05/02	3 U	ug/L	
W213	05/10/03	31	ug/L		W213	05/10/03	0.5 U	ug/L	
W213	04/25/04	21	ug/L		W213	04/25/04	0.96 U	ug/L	
W213	05/15/05	200	ug/L		W213	05/15/05	0.5 U	ug/L	
W213	09/16/06	140	ug/L		W213	09/16/06	0.13 U	ug/L	
W213	12/06/06	140	ug/L		W213	12/06/06	0.13 U	ug/L	
W213	02/28/07	120	ug/L		W213	02/28/07	0.13 U	ug/L	
W213	05/15/07	100	ug/L		W213	05/15/07	0.13 U	ug/L	
W213	08/23/07	81	ug/L		W213	08/23/07	0.08 U	ug/L	
W213	03/27/08	5.5	ug/L		W213	03/27/08	0.08 U	ug/L	
W213	05/26/08	6.8 U	ug/L		W213	05/26/08	0.08 U	ug/L	
W213	08/22/08	2.6 U	ug/L		W213	08/22/08	0.11 j	ug/L	
W213	11/20/08	2.3	ug/L		W213	11/20/08	0.08 U	ug/L	
W215	06/24/87	11	ug/L		W215	06/24/87	27000	ug/L	
W215	06/29/88	8.6	ug/L		W215	06/29/88	4400	ug/L	
W215	06/28/89	10 U	ug/L		W215	06/28/89	2700	ug/L	
W215	06/27/90	16	ug/L		W215	06/27/90	4200	ug/L	
W215	06/19/91	100 U	ug/L		W215	06/19/91	2800	ug/L	
W215	05/28/92	75 U	ug/L		W215	05/28/92	1900	ug/L	
W215	06/02/93	5	ug/L		W215	06/02/93	2200	ug/L	
W215	06/14/94	4	ug/L		W215	06/14/94	3400	ug/L	
W215	06/08/95	500 U	ug/L		W215	06/08/95	1600	ug/L	
W215	06/04/96	1	ug/L		W215	06/04/96	1100	ug/L	
W215	06/06/97	100 U	ug/L		W215	06/06/97	1200	ug/L	
W215	04/29/98	0.7 U	ug/L		W215	04/29/98	700	ug/L	
W215	05/16/99	0.41	ug/L		W215	05/16/99	410	ug/L	
W215	04/03/00	0.48	ug/L		W215	04/03/00	68	ug/L	
W215	04/24/01	0.55	ug/L		W215	04/24/01	320	ug/L	
W215	05/05/02	0.55	ug/L		W215	05/05/02	160	ug/L	
W215	05/05/02	0.52	ug/L		W215	05/05/02	170	ug/L	
W215	05/10/03	0.3	ug/L		W215	05/10/03	47	ug/L	
W215	04/25/04	0.34	ug/L		W215	04/25/04	78	ug/L	
W215	05/15/05	0.64	ug/L		W215	05/15/05	21	ug/L	
W215	09/16/06	0.26 U	ug/L		W215	09/16/06	13	ug/L	
W215	05/16/07	0.18 U	ug/L		W215	05/16/07	2.9	ug/L	
W215	05/26/08	0.31	ug/L		W215	05/26/08	0.08 U	ug/L	
W217	12/19/86	0.041	ug/L		W217	12/19/86	6 U	ug/L	
W217	06/22/87	0.011	ug/L		W217	06/22/87	6 U	ug/L	
W217	06/28/88	0.007	ug/L		W217	06/28/88	6 U	ug/L	
W217	06/27/89	0.0094	ug/L		W217	06/27/89	6 U	ug/L	
W217	06/27/90	0.0019 U	ug/L		W217	06/27/90	6 U	ug/L	
W217	06/19/91	0.011	ug/L		W217	06/19/91	6 U	ug/L	
W217	05/26/92	0.019	ug/L		W217	05/26/92	6 U	ug/L	

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W217	06/02/93	0.00682		ug/L	W217	06/02/93	6 U		ug/L
W217	06/14/94	0.015		ug/L	W217	06/14/94	3 U		ug/L
W217	06/08/95	0.003		ug/L	W217	06/08/95	3 U		ug/L
W217	06/06/97	10 U		ug/L	W217	06/06/97	50 U		ug/L
W217	05/17/99	0.02 U		ug/L	W217	05/17/99	3 U		ug/L
W217	04/20/01	0.02 U		ug/L	W217	04/20/01	0.5 U		ug/L
W217	05/04/03	0.02 U		ug/L	W217	05/04/03	0.5 U		ug/L
W217	05/07/05	0.02 U		ug/L	W217	05/07/05	0.5 U		ug/L
W217	09/10/06	0.008 U		ug/L	W217	09/10/06	0.13 U		ug/L
W217	05/05/07	0.0065 U		ug/L	W217	05/05/07	0.13 U		ug/L
W217	05/18/08	0.048 U		ug/L	W217	05/18/08	0.08 U		ug/L
W218	06/24/87	0.038 U		ug/L	W218	06/24/87	3000		ug/L
W218	06/29/88	1.4		ug/L	W218	06/29/88	860		ug/L
W218	07/10/89	1.9		ug/L	W218	07/10/89	78		ug/L
W218	06/27/90	8.8		ug/L	W218	06/27/90	490		ug/L
W218	06/19/91	0.08 U		ug/L	W218	06/19/91	170		ug/L
W218	05/27/92	0.032 U		ug/L	W218	05/27/92	14		ug/L
W218	07/22/93	0.0823		ug/L	W218	06/02/93	26		ug/L
W218	06/14/94	0.06 U		ug/L	W218	06/14/94	13		ug/L
W218	06/08/95	0.012 U		ug/L	W218	06/08/95	26		ug/L
W218	06/06/97	10 U		ug/L	W218	06/06/97	17		ug/L
W218	05/18/99	0.02 U		ug/L	W218	05/18/99	45		ug/L
W218	04/25/01	0.019 U		ug/L	W218	04/25/01	34		ug/L
W218	05/11/03	0.12		ug/L	W218	05/11/03	3.6		ug/L
W218	05/14/05	0.02 U		ug/L	W218	05/14/05	110		ug/L
W218	09/16/06	5.2		ug/L	W218	09/16/06	66		ug/L
W218	05/16/07	0.01 U		ug/L	W218	05/16/07	15		ug/L
W218	05/27/08	0.023		ug/L	W218	05/27/08	7.8		ug/L
W219	06/24/87	6 U		ug/L	W219	06/24/87	7.8		ug/L
W219	06/29/88	6 U		ug/L	W219	06/29/88	6 U		ug/L
W219	07/10/89	0.69		ug/L	W219	07/10/89	16		ug/L
W219	06/27/90	10 U		ug/L	W219	06/27/90	10 U		ug/L
W219	06/19/91	10 U		ug/L	W219	06/19/91	10 U		ug/L
W219	05/26/92	10 U		ug/L	W219	05/26/92	10 U		ug/L
W219	06/02/93	0.246		ug/L	W219	06/02/93	6 U		ug/L
W219	06/14/94	0.276		ug/L	W219	06/14/94	3 U		ug/L
W219	06/08/95	0.45 U		ug/L	W219	06/08/95	3 U		ug/L
W219	06/06/97	10 U		ug/L	W219	06/06/97	50 U		ug/L
W219	05/17/99	0.14		ug/L	W219	05/17/99	3 U		ug/L
W219	04/05/00	0.21		ug/L	W219	04/05/00	3 U		ug/L
W219	04/20/01	0.22		ug/L	W219	04/20/01	0.5 U		ug/L
W219	05/02/02	0.22		ug/L	W219	05/02/02	3.1 U		ug/L
W219	05/04/03	0.11		ug/L	W219	05/04/03	0.5 U		ug/L
W219	04/25/04	0.13		ug/L	W219	04/25/04	0.96 U		ug/L
W219	05/07/05	0.12 b		ug/L	W219	05/07/05	0.5 U		ug/L
W219	05/07/05	0.11 b		ug/L	W219	05/07/05	0.5 U		ug/L
W219	09/10/06	0.077 U		ug/L	W219	09/10/06	0.13 U		ug/L
W219	09/10/06	0.07 U		ug/L	W219	09/10/06	0.13 U		ug/L
W219	05/05/07	0.067 U		ug/L	W219	05/05/07	0.13 U		ug/L
W219	05/05/07	0.049 U		ug/L	W219	05/05/07	0.13 U		ug/L
W219	05/18/08	0.055 U		ug/L	W219	05/18/08	0.08 U		ug/L

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W220	06/14/94	363	ug/L		W220	06/14/94	1000	ug/L	
W220	12/01/94	270	ug/L		W220	12/01/94	350	ug/L	
W220	06/08/95	200	ug/L		W220	06/08/95	570	ug/L	
W220	06/04/96	76	ug/L		W220	06/04/96	180	ug/L	
W220	06/06/97	48	ug/L		W220	06/06/97	200	ug/L	
W220	04/29/98	23	ug/L		W220	04/29/98	98	ug/L	
W220	05/16/99	11	ug/L		W220	05/16/99	72	ug/L	
W220	04/04/00	21	ug/L		W220	04/04/00	88	ug/L	
W220	04/24/01	18	ug/L		W220	04/24/01	24	ug/L	
W220	05/05/02	16	ug/L		W220	05/05/02	4.5	ug/L	
W220	05/10/03	7.4	ug/L		W220	05/10/03	51	ug/L	
W220	05/10/03	7.3	ug/L		W220	05/10/03	51	ug/L	
W220	04/25/04	14	ug/L		W220	04/25/04	7.5	ug/L	
W220	05/15/05	16	ug/L		W220	05/15/05	9.6	ug/L	
W220	09/17/06	12	ug/L		W220	09/17/06	7.1	ug/L	
W220	09/17/06	11	ug/L		W220	09/17/06	5.2	ug/L	
W220	12/06/06	18	ug/L		W220	12/06/06	0.31 j	ug/L	
W220	02/28/07	9.7	ug/L		W220	02/28/07	0.46 j	ug/L	
W220	05/13/07	9.6	ug/L		W220	05/13/07	12	ug/L	
W220	08/23/07	11	ug/L		W220	08/23/07	0.08 U	ug/L	
W220	10/30/07	1.3 U	ug/L		W220	10/30/07	0.08 U	ug/L	
W220	03/27/08	5.1 U	ug/L		W220	03/27/08	1.9	ug/L	
W220	05/26/08	4.9	ug/L		W220	05/26/08	17	ug/L	
W220	08/23/08	0.56	ug/L		W220	08/23/08	0.5 p	ug/L	
W220	11/19/08	4.3	ug/L		W220	11/19/08	17	ug/L	
W221	06/14/94	0.031	ug/L		W221	06/14/94	3 U	ug/L	
W221	12/01/94	0.012	ug/L		W221	12/01/94	3 U	ug/L	
W221	06/08/95	0.003	ug/L		W221	06/08/95	3 U	ug/L	
W221	06/06/97	10 U	ug/L		W221	06/06/97	50 U	ug/L	
W221	05/17/99	0.02 U	ug/L		W221	05/17/99	3 U	ug/L	
W221	04/20/01	0.02 U	ug/L		W221	04/20/01	0.5 U	ug/L	
W221	05/04/03	0.02 U	ug/L		W221	05/04/03	0.5 U	ug/L	
W221	05/07/05	0.02 U	ug/L		W221	05/07/05	0.5 U	ug/L	
W221	09/09/06	0.0065 U	ug/L		W221	09/09/06	0.13 U	ug/L	
W221	05/05/07	0.0065 U	ug/L		W221	05/05/07	0.13 U	ug/L	
W221	05/18/08	0.013 U	ug/L		W221	05/18/08	0.08 U	ug/L	
MW3	06/27/89	0.0058	ug/L		MW3	06/27/89	6 U	ug/L	
MW3	06/27/90	0.028	ug/L		MW3	06/27/90	6 U	ug/L	
MW3	06/18/91	0.0048	ug/L		MW3	06/18/91	6 U	ug/L	
MW3	05/26/92	0.019	ug/L		MW3	05/26/92	6 U	ug/L	
MW3	06/01/93	0.00941	ug/L		MW3	06/01/93	6 U	ug/L	
MW3	06/14/94	0.015	ug/L		MW3	06/14/94	3 U	ug/L	
MW3	06/06/95	0.017	ug/L		MW3	06/06/95	3 U	ug/L	
MW3	06/04/97	10 U	ug/L		MW3	06/04/97	50 U	ug/L	
MW3	05/15/99	0.02 U	ug/L		MW3	05/15/99	3 U	ug/L	
MW3	04/25/01	0.02 U	ug/L		MW3	04/25/01	0.5 U	ug/L	
MW3	05/07/03	0.02 U	ug/L		MW3	05/07/03	0.5 U	ug/L	
MW3	05/08/05	0.021 U	ug/L		MW3	05/08/05	0.5 U	ug/L	
MW3	09/10/06	0.0065 U	ug/L		MW3	09/10/06	0.13 U	ug/L	
MW3	05/14/07	0.024 U	ug/L		MW3	05/14/07	0.13 U	ug/L	
MW3	05/25/08	0.027 U	ug/L		MW3	05/25/08	0.08 U	ug/L	

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W302	06/22/87	0.012	ug/L		W302	06/22/87	6 U	ug/L	
W302	12/08/87	0.039	ug/L		W302	12/08/87	6 U	ug/L	
W302	06/28/88	0.049	ug/L		W302	06/28/88	6 U	ug/L	
W302	12/14/88	0.017	ug/L		W302	12/14/88	6 U	ug/L	
W302	06/27/89	0.037	ug/L		W302	06/27/89	6 U	ug/L	
W302	06/27/90	0.018	ug/L		W302	06/27/90	6 U	ug/L	
W302	06/19/91	0.037	ug/L		W302	06/19/91	6 U	ug/L	
W302	05/27/92	0.019	ug/L		W302	05/27/92	6 U	ug/L	
W302	06/02/93	0.00947	ug/L		W302	06/02/93	6 U	ug/L	
W302	06/14/94	0.092	ug/L		W302	06/14/94	3 U	ug/L	
W302	06/06/95	0.016	ug/L		W302	06/06/95	3 U	ug/L	
W302	06/04/97	10 U	ug/L		W302	06/04/97	50 U	ug/L	
W302	05/13/99	0.02 U	ug/L		W302	05/13/99	3 U	ug/L	
W302	04/25/01	0.02 U	ug/L		W302	04/25/01	0.5 U	ug/L	
W302	05/08/03	0.042	ug/L		W302	05/08/03	0.5 U	ug/L	
W302	05/08/03	0.043	ug/L		W302	05/08/03	0.5 U	ug/L	
W302	05/08/05	0.02 U	ug/L		W302	05/08/05	0.5 U	ug/L	
W302	09/17/06	0.029 U	ug/L		W302	09/17/06	0.14 j	ug/L	
W302	05/12/07	0.035	ug/L		W302	05/12/07	0.13 U	ug/L	
W302	05/24/08	0.041 U	ug/L		W302	05/24/08	0.08 U	ug/L	
W306	06/22/87	0.016	ug/L		W306	06/22/87	6 U	ug/L	
W306	12/08/87	0.044	ug/L		W306	12/08/87	6 U	ug/L	
W306	06/28/88	0.013	ug/L		W306	06/28/88	6 U	ug/L	
W306	12/14/88	0.029	ug/L		W306	12/14/88	6 U	ug/L	
W306	06/28/89	0.0047	ug/L		W306	06/28/89	6 U	ug/L	
W306	06/27/90	0.003	ug/L		W306	06/27/90	6 U	ug/L	
W306	06/19/91	0.32	ug/L		W306	06/19/91	6 U	ug/L	
W306	05/27/92	0.008 U	ug/L		W306	05/27/92	6 U	ug/L	
W306	06/02/93	0.00923	ug/L		W306	06/02/93	6 U	ug/L	
W306	06/14/94	0.01	ug/L		W306	06/14/94	3 U	ug/L	
W306	06/06/95	0.007	ug/L		W306	06/06/95	3 U	ug/L	
W306	06/05/96	10 U	ug/L		W306	06/05/96	50 U	ug/L	
W306	06/04/97	10 U	ug/L		W306	06/04/97	50 U	ug/L	
W306	04/30/98	0.1 U	ug/L		W306	04/30/98	5 U	ug/L	
W306	05/13/99	0.04	ug/L		W306	05/13/99	3 U	ug/L	
W306	04/04/00	0.02 U	ug/L		W306	04/04/00	3 U	ug/L	
W306	04/25/01	0.02 U	ug/L		W306	04/25/01	0.5 U	ug/L	
W306	05/04/02	0.023	ug/L		W306	05/04/02	0.5 U	ug/L	
W306	05/07/03	0.031	ug/L		W306	05/07/03	0.5 U	ug/L	
W306	04/24/04	0.02 U	ug/L		W306	04/24/04	0.96 U	ug/L	
W306	05/14/05	0.021 U	ug/L		W306	05/14/05	0.5 U	ug/L	
W306	09/18/06	0.034 U	ug/L		W306	09/18/06	0.19 j	ug/L	
W306	05/12/07	0.011 j	ug/L		W306	05/12/07	0.13 U	ug/L	
W306	05/24/08	0.038 U	ug/L		W306	05/24/08	0.08 U	ug/L	
W124	10/20/87	0.0073	ug/L		W124	10/20/87	6 U	ug/L	
W124	01/19/88	0.003	ug/L		W124	01/19/88	6 U	ug/L	
W124	06/29/88	0.028	ug/L		W124	06/29/88	6 U	ug/L	
W124	08/30/88	0.003	ug/L		W124	08/30/88	6 U	ug/L	
W124	12/15/88	0.022	ug/L		W124	12/15/88	6 U	ug/L	
W124	03/28/89	0.0021	ug/L		W124	03/28/89	30 U	ug/L	
W124	06/27/89	0.0048	ug/L		W124	06/27/89	6 U	ug/L	
W124	08/31/89	0.0031	ug/L		W124	08/31/89	6 U	ug/L	

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W124	12/13/89	0.0022	ug/L		W124	12/13/89	6 U	ug/L	
W124	03/05/90	0.004	ug/L		W124	03/05/90	6 U	ug/L	
W124	06/28/90	0.0047	ug/L		W124	06/28/90	6 U	ug/L	
W124	06/18/91	0.004 U	ug/L		W124	06/18/91	6 U	ug/L	
W124	12/18/91	0.0069	ug/L		W124	12/18/91	6 U	ug/L	
W124	05/27/92	0.004 U	ug/L		W124	05/27/92	6 U	ug/L	
W124	12/10/92	0.08 U	ug/L		W124	12/10/92	6 U	ug/L	
W124	02/09/93	0.00679	ug/L						
W124	06/03/93	0.004 U	ug/L		W124	06/03/93	6 U	ug/L	
W124	11/02/93	0.00759	ug/L		W124	11/02/93	6 U	ug/L	
W124	06/15/94	0.004	ug/L		W124	06/15/94	3 U	ug/L	
W124	12/01/94	0.006	ug/L		W124	12/01/94	3 U	ug/L	
W124	06/07/95	0.003 U	ug/L		W124	06/07/95	3 U	ug/L	
W124	11/07/95	0.006 U	ug/L		W124	11/07/95	3 U	ug/L	
W124	06/05/96	10 U	ug/L		W124	06/05/96	50 U	ug/L	
W124	06/04/97	10 U	ug/L		W124	06/04/97	50 U	ug/L	
W124	04/30/98	0.1 U	ug/L		W124	04/30/98	0.5 U	ug/L	
W124	05/13/99	0.02 U	ug/L		W124	05/13/99	3 U	ug/L	
W124	04/03/00	0.02 U	ug/L		W124	04/03/00	3 U	ug/L	
W124	04/26/01	0.019 U	ug/L		W124	04/26/01	0.5 U	ug/L	
W124	05/04/02	0.021 U	ug/L		W124	05/04/02	3.1 U	ug/L	
W124	05/12/03	0.021	ug/L		W124	05/12/03	0.5 U	ug/L	
W124	04/24/04	0.02 U	ug/L		W124	04/24/04	0.96 U	ug/L	
W124	05/11/05	0.021 U	ug/L		W124	05/11/05	0.5 U	ug/L	
W124	09/04/06	0.0081 j	ug/L		W124	09/04/06	0.13 U	ug/L	
W124	05/09/07	0.0074 U	ug/L		W124	05/09/07	0.13 U	ug/L	
W124	05/17/08	0.059 U	ug/L		W124	05/17/08	0.08 U	ug/L	
W125	10/20/87	0.0068	ug/L		W125	10/20/87	6 U	ug/L	
W125	01/19/88	0.0022	ug/L		W125	01/19/88	6 U	ug/L	
W125	06/29/88	0.0034	ug/L		W125	06/29/88	6 U	ug/L	
W125	08/30/88	0.0031	ug/L		W125	08/30/88	6 U	ug/L	
W125	12/15/88	0.0019 U	ug/L		W125	12/15/88	6 U	ug/L	
W125	03/28/89	0.0019 U	ug/L		W125	03/28/89	30 U	ug/L	
W125	06/27/89	0.0047	ug/L		W125	06/27/89	6 U	ug/L	
W125	08/31/89	0.0031	ug/L		W125	08/31/89	6 U	ug/L	
W125	12/13/89	0.0022	ug/L		W125	12/13/89	6 U	ug/L	
W125	03/05/90	0.0044	ug/L		W125	03/05/90	6 U	ug/L	
W125	06/28/90	0.0038 U	ug/L		W125	06/28/90	6 U	ug/L	
W125	06/18/91	0.004 U	ug/L		W125	06/18/91	6 U	ug/L	
W125	12/18/91	0.0057	ug/L		W125	12/18/91	6 U	ug/L	
W125	05/27/92	0.004 U	ug/L		W125	05/27/92	6 U	ug/L	
W125	12/10/92	0.08 U	ug/L		W125	12/10/92	6 U	ug/L	
W125	02/09/93	0.004 U	ug/L						
W125	06/03/93	0.0047	ug/L		W125	06/03/93	6 U	ug/L	
W125	11/02/93	0.00788	ug/L		W125	11/02/93	6 U	ug/L	
W125	06/15/94	0.004	ug/L		W125	06/15/94	3 U	ug/L	
W125	12/01/94	0.005	ug/L		W125	12/01/94	3 U	ug/L	
W125	06/07/95	0.004	ug/L		W125	06/07/95	3 U	ug/L	
W125	11/07/95	0.006 U	ug/L		W125	11/07/95	3 U	ug/L	
W125	06/05/96	10 U	ug/L		W125	06/05/96	50 U	ug/L	
W125	06/04/97	10 U	ug/L		W125	06/04/97	50 U	ug/L	
W125	04/30/98	0.1 U	ug/L		W125	04/30/98	0.5 U	ug/L	
W125	05/13/99	0.02 U	ug/L		W125	05/13/99	3 U	ug/L	

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W125	04/03/00	0.02	U	ug/L	W125	04/03/00	3	U	ug/L
	04/21/01	0.02	U	ug/L		04/21/01	0.5	U	ug/L
	05/04/02	0.02	U	ug/L		05/04/02	3	U	ug/L
	05/07/03	0.02	U	ug/L		05/07/03	0.5	U	ug/L
	04/24/04	0.02	U	ug/L		04/24/04	0.96	U	ug/L
	05/11/05	0.021	U	ug/L		05/11/05	0.5	U	ug/L
	09/04/06	0.0065	U	ug/L		09/04/06	0.13	U	ug/L
	05/09/07	0.0065	U	ug/L		05/09/07	0.13	U	ug/L
	05/17/08	0.04	U	ug/L		05/17/08	0.08	U	ug/L
W126	10/21/87	0.0078	ug/L		W126	10/21/87	6	U	ug/L
	01/19/88	0.004	ug/L			01/19/88	6	U	ug/L
	06/29/88	0.0029	ug/L			06/29/88	6	U	ug/L
	08/30/88	0.0037	ug/L			08/30/88	6	U	ug/L
	12/15/88	0.019	ug/L			12/15/88	6	U	ug/L
	05/09/89	0.013	ug/L			05/09/89	6	U	ug/L
	06/27/89	0.0062	ug/L			06/27/89	6	U	ug/L
	08/31/89	0.0026	ug/L			08/31/89	6	U	ug/L
	12/13/89	0.0023	ug/L			12/13/89	6	U	ug/L
	03/05/90	0.0033	ug/L			03/05/90	6	U	ug/L
	06/28/90	0.0029	ug/L			06/28/90	6	U	ug/L
	06/18/91	0.004	U	ug/L		06/18/91	6	U	ug/L
	12/18/91	0.0049	ug/L			12/18/91	6	U	ug/L
	05/27/92	0.004	U	ug/L		05/27/92	6	U	ug/L
	12/10/92	0.004	U	ug/L		12/10/92	6	U	ug/L
	06/03/93	0.00436	ug/L			06/03/93	6	U	ug/L
	11/02/93	0.00653	ug/L			11/02/93	6	U	ug/L
	06/15/94	0.005	ug/L			06/15/94	3	U	ug/L
	12/01/94	0.5	U	ug/L		12/01/94	3	U	ug/L
	06/07/95	0.009	ug/L			06/07/95	3	U	ug/L
	07/28/95	0.003	U	ug/L					
	11/07/95	0.012	U	ug/L	W126	11/07/95	3	U	ug/L
	06/05/96	10	U	ug/L		06/05/96	50	U	ug/L
	06/04/97	10	U	ug/L		06/04/97	50	U	ug/L
	04/30/98	0.1	U	ug/L		04/30/98	5	U	ug/L
	05/13/99	0.02	U	ug/L					
	04/03/00	0.02	U	ug/L		04/03/00	3	U	ug/L
	04/21/01	0.02	U	ug/L		04/21/01	0.5	U	ug/L
	05/04/02	0.02	U	ug/L		05/04/02	2.9	U	ug/L
	05/07/03	0.02	U	ug/L		05/07/03	0.5	U	ug/L
W126	04/24/04	0.02	U	ug/L		04/24/04	0.96	U	ug/L
	05/10/05	0.021	U	ug/L		05/10/05	0.5	U	ug/L
	09/03/06	0.0066	j	ug/L		09/03/06	0.13	U	ug/L
	05/09/07	0.0068	U	ug/L		05/09/07	0.13	U	ug/L
	05/17/08	0.077	U	ug/L		05/17/08	0.08	U	ug/L
W127	10/20/87	0.0065	ug/L		W127	10/20/87	6	U	ug/L
	01/19/88	0.0041	ug/L			01/19/88	6	U	ug/L
	06/29/88	0.0039	ug/L			06/29/88	6	U	ug/L
	08/30/88	0.0031	ug/L			08/30/88	6	U	ug/L
	12/15/88	0.023	ug/L			12/15/88	6	U	ug/L
	03/28/89	0.0027	ug/L			03/28/89	30	U	ug/L
	06/27/89	0.0032	ug/L			06/27/89	6	U	ug/L
	08/31/89	0.0059	ug/L			08/31/89	6	U	ug/L

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W127	12/13/89	0.0022	ug/L		W127	12/13/89	6 U	ug/L	
W127	03/05/90	0.0039	ug/L		W127	03/05/90	6 U	ug/L	
W127	06/28/90	0.0032	ug/L		W127	06/28/90	6 U	ug/L	
W127	06/18/91	0.004	ug/L		W127	06/18/91	6 U	ug/L	
W127	12/18/91	0.0042	ug/L		W127	12/18/91	6 U	ug/L	
W127	05/27/92	0.004 U	ug/L		W127	05/27/92	6 U	ug/L	
W127	05/13/99	0.02 U	ug/L		W127	05/13/99	3 U	ug/L	
W127	10/06/99	0.02 U	ug/L		W127	10/06/99	3 U	ug/L	
W127	04/03/00	0.02 U	ug/L		W127	04/03/00	3 U	ug/L	
W127	04/21/01	0.02 U	ug/L		W127	04/21/01	0.5 U	ug/L	
W127	05/04/02	0.02 U	ug/L		W127	05/04/02	2.9 U	ug/L	
W127	05/13/03	0.02 U	ug/L		W127	05/13/03	0.5 U	ug/L	
W127	04/24/04	0.02 U	ug/L		W127	04/24/04	0.97 U	ug/L	
W127	05/10/05	0.022 U	ug/L		W127	05/10/05	0.5 U	ug/L	
W127	09/04/06	0.0065 U	ug/L		W127	09/04/06	0.13 U	ug/L	
W127	05/09/07	0.0077 U	ug/L		W127	05/09/07	1.8	ug/L	
W127	08/24/07	0.0042 U	ug/L		W127	08/24/07	0.08 U	ug/L	
W127	05/17/08	0.049 U	ug/L		W127	05/17/08	0.08 U	ug/L	
W128	10/21/87	0.0077	ug/L		W128	10/21/87	6 U	ug/L	
W128	01/19/88	0.0045	ug/L		W128	01/19/88	6 U	ug/L	
W128	06/29/88	0.0027	ug/L		W128	06/29/88	6 U	ug/L	
W128	08/30/88	0.0035	ug/L		W128	08/30/88	6 U	ug/L	
W128	12/15/88	0.027	ug/L		W128	12/15/88	6 U	ug/L	
W128	03/28/89	0.0026	ug/L		W128	03/28/89	30 U	ug/L	
W128	06/27/89	0.0028	ug/L		W128	06/27/89	6 U	ug/L	
W128	08/31/89	0.0031	ug/L		W128	08/31/89	6 U	ug/L	
W128	12/13/89	0.0019	ug/L		W128	12/13/89	6 U	ug/L	
W128	03/05/90	0.0049	ug/L		W128	03/05/90	6 U	ug/L	
W128	06/28/90	0.0035	ug/L		W128	06/28/90	6 U	ug/L	
W128	06/18/91	0.004 U	ug/L		W128	06/18/91	6 U	ug/L	
W128	12/18/91	0.007	ug/L		W128	12/18/91	6 U	ug/L	
W128	05/27/92	0.004 U	ug/L		W128	05/27/92	6 U	ug/L	
W128	12/10/92	0.004 U	ug/L		W128	12/10/92	6 U	ug/L	
W128	06/03/93	0.00414	ug/L		W128	06/03/93	6 U	ug/L	
W128	11/02/93	0.00759	ug/L		W128	11/02/93	6 U	ug/L	
W128	06/15/94	0.018	ug/L		W128	06/15/94	3 U	ug/L	
W128	08/24/94	0.006	ug/L						
W128	12/01/94	0.004	ug/L		W128	12/01/94	3 U	ug/L	
W128	06/07/95	0.003	ug/L		W128	06/07/95	3 U	ug/L	
W128	11/07/95	0.012 U	ug/L		W128	11/07/95	3 U	ug/L	
W128	06/05/96	10 U	ug/L		W128	06/05/96	50 U	ug/L	
W128	06/04/97	10 U	ug/L		W128	06/04/97	50 U	ug/L	
W128	04/30/98	0.1 U	ug/L		W128	04/30/98	0.5 U	ug/L	
W128	05/13/99	0.02 U	ug/L		W128	05/13/99	3 U	ug/L	
W128	04/03/00	0.02 U	ug/L		W128	04/03/00	3 U	ug/L	
W128	04/21/01	0.02 U	ug/L		W128	04/21/01	0.5 U	ug/L	
W128	05/04/02	0.02 U	ug/L		W128	05/04/02	3 U	ug/L	
W128	05/07/03	0.02 U	ug/L		W128	05/07/03	0.5 U	ug/L	
W128	04/24/04	0.02 U	ug/L		W128	04/24/04	0.98 U	ug/L	
W128	05/10/05	0.022 U	ug/L		W128	05/10/05	0.5 U	ug/L	
W128	09/03/06	0.0065 U	ug/L		W128	09/03/06	0.13 U	ug/L	
W128	05/09/07	0.0066 U	ug/L		W128	05/09/07	0.13 U	ug/L	
W128	05/17/08	0.092 U	ug/L		W128	05/17/08	0.08 U	ug/L	

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W129	08/27/92	0.012	ug/L		W129	08/27/92	6 U	ug/L	
W129	12/10/92	0.004	U	ug/L	W129	12/10/92	6 U	ug/L	
W129	06/03/93	0.00407		ug/L	W129	06/03/93	6 U	ug/L	
W129	11/02/93	0.00518		ug/L	W129	11/02/93	6 U	ug/L	
W129	06/15/94	0.003		ug/L	W129	06/15/94	3 U	ug/L	
W129	12/01/94	0.004		ug/L	W129	12/01/94	3 U	ug/L	
W129	06/07/95	0.003		ug/L	W129	06/07/95	3 U	ug/L	
W129	11/09/95	0.03	U	ug/L	W129	11/09/95	3 U	ug/L	
W129	06/05/96	10	U	ug/L	W129	06/05/96	50 U	ug/L	
W129	06/04/97	10	U	ug/L	W129	06/04/97	50 U	ug/L	
W129	04/30/98	0.1	U	ug/L	W129	04/30/98	0.5 U	ug/L	
W129	05/13/99	0.02	U	ug/L	W129	05/13/99	3 U	ug/L	
W129	04/03/00	0.02	U	ug/L	W129	04/03/00	3 U	ug/L	
W129	04/21/01	0.019	U	ug/L	W129	04/21/01	0.5 U	ug/L	
W129	05/04/02	0.021	U	ug/L	W129	05/04/02	3.1 U	ug/L	
W129	05/07/03	0.02	U	ug/L	W129	05/07/03	0.5 U	ug/L	
W129	04/24/04	0.02	U	ug/L	W129	04/24/04	0.99 U	ug/L	
W129	05/11/05	0.021	U	ug/L	W129	05/11/05	0.5 U	ug/L	
W129	09/03/06	0.01	j	ug/L	W129	09/03/06	0.13 U	ug/L	
W129	05/09/07	0.0066	U	ug/L	W129	05/09/07	0.13 U	ug/L	
W129	05/17/08	0.027	U	ug/L	W129	05/17/08	0.08 U	ug/L	
W130	08/27/92	0.004	U	ug/L	W130	08/27/92	6 U	ug/L	
W130	12/10/92	0.004	U	ug/L	W130	12/10/92	6 U	ug/L	
W130	02/09/93	0.004	U	ug/L					
W130	06/03/93	0.008	U	ug/L	W130	06/03/93	6 U	ug/L	
W130	11/02/93	0.0057		ug/L	W130	11/02/93	6 U	ug/L	
W130	06/15/94	0.004		ug/L	W130	06/15/94	3 U	ug/L	
W130	12/01/94	0.005		ug/L	W130	12/01/94	3 U	ug/L	
W130	06/07/95	0.003		ug/L	W130	06/07/95	3 U	ug/L	
W130	11/09/95	0.03	U	ug/L	W130	11/09/95	3 U	ug/L	
W130	06/05/96	10	U	ug/L	W130	06/05/96	50 U	ug/L	
W130	06/04/97	10	U	ug/L	W130	06/04/97	50 U	ug/L	
W130	04/30/98	0.1	U	ug/L	W130	04/30/98	5 U	ug/L	
W130	05/13/99	0.02	U	ug/L	W130	05/13/99	3 U	ug/L	
W130	04/03/00	0.02	U	ug/L	W130	04/03/00	3 U	ug/L	
W130	04/21/01	0.02	U	ug/L	W130	04/21/01	0.5 U	ug/L	
W130	05/04/02	0.02	U	ug/L	W130	05/04/02	3 U	ug/L	
W130	05/07/03	0.02	U	ug/L	W130	05/07/03	0.5 U	ug/L	
W130	04/24/04	0.02	U	ug/L	W130	04/24/04	0.98 U	ug/L	
W130	05/10/05	0.022	U	ug/L	W130	05/10/05	0.5 U	ug/L	
W130	09/03/06	0.0078	j	ug/L	W130	09/03/06	0.13 U	ug/L	
W130	05/09/07	0.0088	U	ug/L	W130	05/09/07	0.13 U	ug/L	
W130	05/17/08	0.086	U	ug/L	W130	05/17/08	0.08 U	ug/L	
W2106	08/22/85	1500		ug/L	W2106	08/22/85	19000	ug/L	
W2106	10/10/01	1500		ug/L	W2106	10/10/01	2600	J	ug/L
W2106	09/16/06	2600		ug/L	W2106	09/16/06	56000	h	ug/L
W2106	09/16/06	1700		ug/L	W2106	09/16/06	60000	D	ug/L
W2106	05/17/07	0.98	j	ug/L	W2106	05/17/07	22000		ug/L
W2106	05/17/07	1.2	j	ug/L	W2106	05/17/07	22000		ug/L
W2106	05/27/08	120	*	ug/L	W2106	05/27/08	16000		ug/L

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W2127	06/25/87	0.0038		ug/L	W2127	06/25/87	6 U		ug/L
W2127	06/30/88	0.0074		ug/L	W2127	06/30/88	6 U		ug/L
W2127	06/28/89	0.073		ug/L	W2127	06/28/89	6 U		ug/L
W2127	06/28/90	0.0019		ug/L	W2127	06/28/90	6 U		ug/L
W2127	06/19/91	0.13		ug/L	W2127	06/19/91	6 U		ug/L
W2127	05/27/92	0.004 U		ug/L	W2127	05/27/92	6 U		ug/L
W2127	07/22/93	0.00882		ug/L	W2127	06/02/93	6 U		ug/L
W2127	06/15/94	0.03 U		ug/L	W2127	06/15/94	3 U		ug/L
W2127	06/06/95	0.003		ug/L	W2127	06/06/95	3 U		ug/L
W2127	06/04/96	10 U		ug/L	W2127	06/04/96	50 U		ug/L
W2127	06/05/97	10 U		ug/L	W2127	06/05/97	50 U		ug/L
W2127	04/29/98	0.1 U		ug/L	W2127	04/29/98	5 U		ug/L
W2127	05/17/99	0.02 U		ug/L	W2127	05/17/99	3 U		ug/L
W2127	04/05/00	0.02 U		ug/L	W2127	04/05/00	3 U		ug/L
W2127	04/20/01	0.02 U		ug/L	W2127	04/20/01	0.5 U		ug/L
W2127	10/16/01	5 U		ug/L	W2127	10/16/01	5 U		ug/L
W2127	05/03/02	0.02 U		ug/L	W2127	05/03/02	2.9 U		ug/L
W2127	05/04/03	0.02 U		ug/L	W2127	05/04/03	0.5 U		ug/L
W2127	04/26/04	0.02 U		ug/L	W2127	04/26/04	0.96 U		ug/L
W2127	05/15/05	0.02 U		ug/L	W2127	05/15/05	0.5 U		ug/L
W2127	09/05/06	0.012 U		ug/L	W2127	09/05/06	0.13 U		ug/L
W2127	05/10/07	0.0069 U		ug/L	W2127	05/10/07	0.13 U		ug/L
W2127	05/21/08	0.04		ug/L	W2127	05/21/08	0.08 U		ug/L
W2128	05/06/86	1200		ug/L	W2128	05/06/86	1700		ug/L
W2128	04/27/87	1600		ug/L	W2128	04/27/87	330		ug/L
W2128	06/23/87	6 U		ug/L	W2128	06/23/87	3400		ug/L
W2128	06/30/88	6 U		ug/L	W2128	06/30/88	2400		ug/L
W2128	06/28/89	1200		ug/L	W2128	06/28/89	1200		ug/L
W2128	06/28/90	10 U		ug/L	W2128	06/28/90	190		ug/L
W2128	06/19/91	10 U		ug/L	W2128	06/19/91	99		ug/L
W2128	05/27/92	10 U		ug/L	W2128	05/27/92	10 U		ug/L
W2128	07/22/93	1.06		ug/L	W2128	06/02/93	130		ug/L
W2128	06/15/94	0.12 U		ug/L	W2128	06/15/94	38		ug/L
W2128	06/06/95	13		ug/L	W2128	06/06/95	120		ug/L
W2128	06/05/97	96		ug/L	W2128	06/05/97	79		ug/L
W2128	05/17/99	23		ug/L	W2128	05/17/99	3.7		ug/L
W2128	04/05/00	23		ug/L	W2128	04/05/00	4		ug/L
W2128	04/20/01	49		ug/L	W2128	04/20/01	48		ug/L
W2128	05/03/02	43		ug/L	W2128	05/03/02	2.9 U		ug/L
W2128	05/04/03	25		ug/L	W2128	05/04/03	25		ug/L
W2128	10/07/04	1.8		ug/L	W2128	10/07/04	5.5		ug/L
W2128	05/15/05	6.1		ug/L	W2128	05/15/05	6.4		ug/L
W2128	09/05/06	13		ug/L	W2128	09/05/06	24		ug/L
W2128	12/05/06	0.01 U		ug/L	W2128	12/05/06	6.5		ug/L
W2128	05/15/07	0.014 U		ug/L	W2128	05/15/07	5.1		ug/L
W2128	08/23/07	6.5		ug/L	W2128	08/23/07	4.1		ug/L
W2128	10/30/07	1.7		ug/L	W2128	10/30/07	3		ug/L
W2128	05/28/08	1.3		ug/L	W2128	05/28/08	5.9		ug/L
W2128	08/22/08	0.39 U		ug/L	W2128	08/22/08	5.5		ug/L
W2129	06/25/87	0.012		ug/L	W2129	06/25/87	9.1		ug/L
W2129	06/30/88	0.0045		ug/L	W2129	06/30/88	6 U		ug/L
W2129	06/28/89	10 U		ug/L	W2129	06/28/89	10 U		ug/L

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W2129	06/28/90	0.0028	ug/L		W2129	06/28/90	6 U	ug/L	
W2129	06/19/91	0.0047	ug/L		W2129	06/19/91	6 U	ug/L	
W2129	05/27/92	0.005	ug/L		W2129	05/27/92	6 U	ug/L	
W2129	07/22/93	0.0146	ug/L		W2129	06/02/93	6 U	ug/L	
W2129	06/15/94	0.004	ug/L		W2129	06/15/94	3 U	ug/L	
W2129	06/06/95	0.004	ug/L		W2129	06/06/95	3 U	ug/L	
W2129	06/04/96	10 U	ug/L		W2129	06/04/96	50 U	ug/L	
W2129	06/05/97	10 U	ug/L		W2129	06/05/97	50 U	ug/L	
W2129	04/29/98	0.1 U	ug/L		W2129	04/29/98	5 U	ug/L	
W2129	05/17/99	0.02 U	ug/L		W2129	05/17/99	3 U	ug/L	
W2129	04/05/00	0.02 U	ug/L		W2129	04/05/00	3 U	ug/L	
W2129	04/20/01	0.02 U	ug/L		W2129	04/20/01	1.5	ug/L	
W2129	10/12/01	5 U	ug/L		W2129	10/12/01	5 U	ug/L	
W2129	05/03/02	0.034	ug/L		W2129	05/03/02	0.5 U	ug/L	
W2129	05/04/03	0.02 U	ug/L		W2129	05/04/03	0.5 U	ug/L	
W2129	10/07/04	0.02 U	ug/L		W2129	10/07/04	0.5 U	ug/L	
W2129	05/15/05	0.02 U	ug/L		W2129	05/15/05	0.5 U	ug/L	
W2129	09/04/06	0.0074 j	ug/L		W2129	09/04/06	0.13 U	ug/L	
W2129	05/10/07	0.0068 U	ug/L		W2129	05/10/07	0.13 U	ug/L	
W2129	05/21/08	0.03	ug/L		W2129	05/21/08	0.08 U	ug/L	
W2134	07/02/86	0.015 U	ug/L		W2134	07/02/86	470	ug/L	
W2134	12/18/86	0.6 U	ug/L		W2134	12/18/86	1600	ug/L	
W2134	04/27/87	5.2 U	ug/L		W2134	04/27/87	17	ug/L	
W2134	06/26/87	6 U	ug/L		W2134	06/26/87	11000	ug/L	
W2134	06/30/88	6 U	ug/L		W2134	06/30/88	4600	ug/L	
W2134	06/29/89	0.013	ug/L		W2134	06/29/89	74	ug/L	
W2134	06/28/90	10 U	ug/L		W2134	06/28/90	10 U	ug/L	
W2134	06/20/91	10 U	ug/L		W2134	06/20/91	10 U	ug/L	
W2134	05/28/92	10 U	ug/L		W2134	05/28/92	10 U	ug/L	
W2134	07/22/93	0.0199	ug/L		W2134	06/02/93	6 U	ug/L	
W2134	06/15/94	0.06 U	ug/L		W2134	06/15/94	3 U	ug/L	
W2134	06/06/95	0.004	ug/L		W2134	06/06/95	3 U	ug/L	
W2134	06/05/97	10 U	ug/L		W2134	06/05/97	50 U	ug/L	
W2134	05/15/99	0.02 U	ug/L		W2134	05/15/99	3 U	ug/L	
W2134	04/26/01	0.019 U	ug/L		W2134	04/26/01	0.5 U	ug/L	
W2134	05/06/03	0.02 U	ug/L		W2134	05/06/03	0.5 U	ug/L	
W2134	05/06/03	0.02 U	ug/L		W2134	05/06/03	0.5 U	ug/L	
W2134	05/14/05	0.021 U	ug/L		W2134	05/14/05	0.5 U	ug/L	
W2134	09/09/06	0.0065 U	ug/L		W2134	09/09/06	0.13 U	ug/L	
W2134	05/09/07	0.0065 U	ug/L		W2134	05/09/07	0.13 U	ug/L	
W2134	05/20/08	0.0094 U	ug/L		W2134	05/20/08	0.08 U	ug/L	
W2135	12/18/86	0.11	ug/L		W2135	12/18/86	6 U	ug/L	
W2135	06/23/87	0.017	ug/L		W2135	06/23/87	6 U	ug/L	
W2135	06/30/88	0.009	ug/L		W2135	06/30/88	6 U	ug/L	
W2135	06/29/89	0.0036	ug/L		W2135	06/29/89	6 U	ug/L	
W2135	06/28/90	0.0021	ug/L		W2135	06/28/90	6 U	ug/L	
W2135	06/20/91	0.008 U	ug/L		W2135	06/20/91	6 U	ug/L	
W2135	05/28/92	0.0048	ug/L		W2135	05/28/92	6 U	ug/L	
W2135	07/22/93	0.00847	ug/L		W2135	06/03/93	6 U	ug/L	
W2135	06/15/94	0.06 U	ug/L		W2135	06/15/94	3 U	ug/L	
W2135	06/06/95	0.003 U	ug/L		W2135	06/06/95	3 U	ug/L	

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W2135	06/04/96	10	U	ug/L	W2135	06/04/96	50	U	ug/L
W2135	06/05/97	10	U	ug/L	W2135	06/05/97	50	U	ug/L
W2135	04/29/98	0.1	U	ug/L	W2135	04/29/98	5	U	ug/L
W2135	05/15/99	0.02	U	ug/L	W2135	04/05/00	3	U	ug/L
W2135	04/05/00	0.02	U	ug/L	W2135	04/26/01	0.5	U	ug/L
W2135	04/26/01	0.019	U	ug/L	W2135	10/10/01	5	U	ug/L
W2135	10/10/01	5	U	ug/L	W2135	10/10/01	5	U	ug/L
W2135	10/10/01	5	U	ug/L	W2135	05/05/02	3.2	U	ug/L
W2135	05/05/02	0.046	ug/L		W2135	05/08/03	0.5	U	ug/L
W2135	05/08/03	0.02	U	ug/L	W2135	04/24/04	0.96	U	ug/L
W2135	04/24/04	0.02	U	ug/L	W2135	05/14/05	0.5	U	ug/L
W2135	05/14/05	0.021	U	ug/L	W2135	09/11/06	0.13	U	ug/L
W2135	09/11/06	0.017	U	ug/L	W2135	05/12/07	0.13	U	ug/L
W2135	05/12/07	0.0079	j	ug/L	W2135	05/20/08	0.08	U	ug/L
W2135	05/20/08	0.022	U	ug/L					
W2228	05/28/08	0.37	U	u	W2228	05/28/08	2.5	U	u
W2233	09/14/06	0.0071	U	ug/L	W2233	09/14/06	0.13	U	ug/L
W2233	12/07/06	0.13	U	ug/L	W2233	12/07/06	0.13	U	ug/L
W2233	02/27/07	0.0094	j	ug/L	W2233	02/27/07	0.13	U	ug/L
W2233	05/13/07	0.0065	U	ug/L	W2233	05/13/07	0.13	U	ug/L
W2233	08/23/07	0.015	U	ug/L	W2233	08/23/07	0.08	U	ug/L
W2233	10/30/07	0.034	U	ug/L	W2233	10/30/07	0.08	U	ug/L
W2233	03/27/08	0.078	U	ug/L	W2233	03/27/08	0.08	U	ug/L
W2233	05/20/08	0.032	U	ug/L	W2233	05/20/08	0.08	U	ug/L
W2233	08/22/08	0.075	U	ug/L	W2233	08/22/08	0.08	U	ug/L
W2233	11/19/08	0.025	U	ug/L	W2233	11/19/08	0.08	U	ug/L
W2234	02/25/87	0.068	ug/L		W2234	02/25/87	6	U	ug/L
W2234	03/09/87	0.6	U	ug/L	W2234	03/09/87	0.6	U	ug/L
W2234	06/25/87	0.022	ug/L		W2234	06/25/87	6	U	ug/L
W2234	06/30/88	0.056	ug/L		W2234	06/30/88	6	U	ug/L
W2234	06/29/89	0.11	ug/L		W2234	06/29/89	6	U	ug/L
W2234	06/20/91	0.0045	ug/L		W2234	06/20/91	6	U	ug/L
W2234	05/28/92	10	U	ug/L	W2234	05/28/92	10	U	ug/L
W2234	12/10/92	10	U	ug/L	W2234	12/10/92	10	U	ug/L
W2234	07/22/93	0.096	U	ug/L	W2234	06/02/93	6	U	ug/L
W2234	11/02/93	0.0271	ug/L		W2234	11/02/93	6	U	ug/L
W2234	06/15/94	0.06	U	ug/L	W2234	06/15/94	3	U	ug/L
W2234	12/01/94	0.014	ug/L		W2234	12/01/94	3	U	ug/L
W2234	06/06/95	0.004	ug/L		W2234	06/06/95	3	U	ug/L
W2234	06/04/96	10	U	ug/L	W2234	06/04/96	50	U	ug/L
W2234	06/05/97	10	U	ug/L	W2234	06/05/97	50	U	ug/L
W2234	04/29/98	0.1	U	ug/L	W2234	04/29/98	5	U	ug/L
W2234	05/15/99	0.02	U	ug/L	W2234	05/15/99	3	U	ug/L
W2234	04/05/00	0.02	U	ug/L	W2234	04/05/00	3	U	ug/L
W2234	04/26/01	0.019	U	ug/L	W2234	04/26/01	0.5	U	ug/L
W2234	05/03/02	0.02	U	ug/L	W2234	05/03/02	3	U	ug/L
W2234	05/06/03	0.02	U	ug/L	W2234	05/06/03	0.5	U	ug/L
W2234	05/06/03	0.02	U	ug/L	W2234	05/06/03	0.5	U	ug/L
W2234	04/25/04	0.02	U	ug/L	W2234	04/25/04	0.98	U	ug/L
W2234	04/25/04	0.02	U	ug/L	W2234	04/25/04	0.98	U	ug/L
W2234	05/14/05	0.021	U	ug/L	W2234	05/14/05	0.5	U	ug/L

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W2234	05/14/05	0.021	U	ug/L	W2234	05/14/05	0.5	U	ug/L
W2234	09/09/06	0.0065	U	ug/L	W2234	09/09/06	0.13	U	ug/L
W2234	09/09/06	0.0065	U	ug/L	W2234	09/09/06	0.13	U	ug/L
W2234	05/09/07	0.0066	U	ug/L	W2234	05/09/07	0.13	U	ug/L
W2234	05/09/07	0.0065	U	ug/L	W2234	05/09/07	0.13	U	ug/L
W2234	05/09/07	0.0065	U	ug/L	W2234	05/09/07	0.13	U	ug/L
W2234	05/20/08	0.015	U	ug/L	W2234	05/20/08	0.08	U	ug/L
W2236	09/19/06	0.011	U	ug/L	W2236	09/19/06	0.13	U	ug/L
W2236	12/07/06	0.011	U	ug/L	W2236	12/07/06	0.13	U	ug/L
W2236	12/07/06	0.01	U	ug/L	W2236	12/07/06	0.13	U	ug/L
W2236	02/27/07	0.0065	U	ug/L	W2236	02/27/07	0.13	U	ug/L
W2236	05/13/07	0.17		ug/L	W2236	05/13/07	1.1		ug/L
W2236	08/24/07	0.0069	U	ug/L	W2236	08/24/07	0.08	U	ug/L
W2236	10/31/07	0.0069	U	ug/L	W2236	08/24/07	0.08	U	ug/L
W2236	10/31/07	0.0083	U	ug/L	W2236	10/31/07	0.08	U	ug/L
W2236	03/28/08	0.0038	U	ug/L	W2236	03/28/08	0.08	U	ug/L
W2236	05/22/08	0.031	U	ug/L	W2236	05/22/08	0.08	U	ug/L
W2236	08/23/08	0.017	U	ug/L	W2236	08/23/08	0.08	U	ug/L
W2236	11/20/08	0.0046	U	ug/L	W2236	11/20/08	0.08	U	ug/L
W2238	05/28/08	99		ug/L	W2238	05/28/08	3.4	j	ug/L
W2301	06/25/87	0.012		ug/L	W2301	12/17/86	6	U	ug/L
W2301	12/08/87	0.051		ug/L	W2301	06/25/87	6	U	ug/L
W2301	06/30/88	0.0098		ug/L	W2301	12/08/87	6	U	ug/L
W2301	12/15/88	0.21		ug/L	W2301	06/30/88	6	U	ug/L
W2301	03/28/89	0.018		ug/L	W2301	12/15/88	6	U	ug/L
W2301	06/29/89	0.04		ug/L	W2301	06/29/89	6	U	ug/L
W2301	12/14/89	0.038	U	ug/L	W2301	12/14/89	6	U	ug/L
W2301	06/28/90	0.0082		ug/L	W2301	06/28/90	6	U	ug/L
W2301	12/04/90	0.046		ug/L	W2301	12/04/90	6	U	ug/L
W2301	06/20/91	0.004		ug/L	W2301	06/20/91	6	U	ug/L
W2301	12/17/91	0.014		ug/L	W2301	12/17/91	6	U	ug/L
W2301	05/28/92	0.0062		ug/L	W2301	05/28/92	6	U	ug/L
W2301	07/22/93	0.0135		ug/L	W2301	06/03/93	6	U	ug/L
W2301	06/15/94	10	U	ug/L	W2301	06/15/94	5	U	ug/L
W2301	06/07/95	0.01		ug/L	W2301	06/07/95	3	U	ug/L
W2301	06/04/97	10	U	ug/L	W2301	06/04/97	50	U	ug/L
W2301	05/15/99	0.03		ug/L	W2301	05/15/99	3	U	ug/L
W2301	04/26/01	0.058		ug/L	W2301	04/26/01	0.5	U	ug/L
W2301	10/11/01	5	U	ug/L	W2301	10/11/01	5	U	ug/L
W2301	05/08/03	0.13		ug/L	W2301	05/08/03	0.5	U	ug/L
W2301	05/11/05	0.12		ug/L	W2301	05/11/05	0.5	U	ug/L
W2301	09/14/06	0.0065	U	ug/L	W2301	09/14/06	0.2	j	ug/L
W2301	05/12/07	0.0099	j	ug/L	W2301	05/12/07	0.13	U	ug/L
W2301	05/22/08	0.035		ug/L	W2301	05/22/08	0.08	U	ug/L
W2325	06/25/87	0.011		ug/L	W2325	12/17/86	6	U	ug/L
W2325	12/08/87	0.056		ug/L	W2325	06/25/87	6	U	ug/L
W2325	06/30/88	0.007		ug/L	W2325	12/08/87	6	U	ug/L
W2325	06/30/88				W2325	06/30/88	6	U	ug/L

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W2325	12/15/88	0.044	ug/L		W2325	12/15/88	6 U	ug/L	
W2325	03/28/89	0.022	ug/L		W2325	06/29/89	6 U	ug/L	
W2325	06/29/89	0.021	ug/L		W2325	12/14/89	6 U	ug/L	
W2325	12/14/89	0.031	ug/L		W2325	06/28/90	6 U	ug/L	
W2325	06/28/90	0.0099	ug/L		W2325	12/04/90	6 U	ug/L	
W2325	12/04/90	0.0062	ug/L		W2325	06/20/91	6 U	ug/L	
W2325	12/17/91	0.0094	ug/L		W2325	12/17/91	6 U	ug/L	
W2325	05/28/92	0.009	ug/L		W2325	05/28/92	6 U	ug/L	
W2325	07/22/93	0.0113	ug/L		W2325	06/15/94	3 U	ug/L	
W2325	06/15/94	0.292	ug/L		W2325	06/05/95	3 U	ug/L	
W2325	06/05/95	0.004	ug/L		W2325	06/05/97	50 U	ug/L	
W2325	06/05/97	10 U	ug/L		W2325	05/18/99	3 U	ug/L	
W2325	05/18/99	0.02 U	ug/L		W2325	04/26/01	0.5 U	ug/L	
W2325	04/26/01	0.019 U	ug/L		W2325	05/05/03	0.5 U	ug/L	
W2325	05/05/03	0.02 U	ug/L		W2325	05/11/05	0.5 U	ug/L	
W2325	05/11/05	0.021 U	ug/L		W2325	09/10/06	0.13 U	ug/L	
W2325	09/10/06	0.015 U	ug/L		W2325	05/07/07	0.13 U	ug/L	
W2325	05/07/07	0.0077 U	ug/L		W2325	05/21/08	0.08 U	ug/L	
W2325	05/21/08	0.02	ug/L						
W2326	06/24/87	0.013	ug/L		W2326	06/24/87	6 U	ug/L	
W2326	12/08/87	0.041	ug/L		W2326	12/08/87	6 U	ug/L	
W2326	06/30/88	0.0071	ug/L		W2326	06/30/88	6 U	ug/L	
W2326	12/15/88	0.24	ug/L		W2326	12/15/88	6 U	ug/L	
W2326	03/28/89	0.034	ug/L		W2326	06/29/89	6 U	ug/L	
W2326	06/29/89	0.017	ug/L		W2326	06/28/90	10 U	ug/L	
W2326	06/28/90	10 U	ug/L		W2326	06/20/91	10 U	ug/L	
W2326	06/20/91	10 U	ug/L		W2326	05/28/92	10 U	ug/L	
W2326	05/28/92	10	ug/L		W2326	08/27/92	10 U	ug/L	
W2326	08/27/92	10 U	ug/L		W2326	06/02/93	6 U	ug/L	
W2326	07/22/93	0.0194	ug/L		W2326	06/15/94	3 U	ug/L	
W2326	06/15/94	0.06 U	ug/L		W2326	06/07/95	3 U	ug/L	
W2326	06/07/95	0.014	ug/L		W2326	06/04/97	50 U	ug/L	
W2326	06/04/97	10 U	ug/L		W2326	05/15/99	3 U	ug/L	
W2326	05/15/99	0.07	ug/L		W2326	04/26/01	0.5 U	ug/L	
W2326	04/26/01	0.068	ug/L		W2326	10/11/01	5.1 UJ	ug/L	
W2326	10/11/01	5.1 UJ	ug/L		W2326	05/08/03	0.5 U	ug/L	
W2326	05/08/03	0.067	ug/L		W2326	05/11/05	0.5 U	ug/L	
W2326	05/11/05	0.25	ug/L		W2326	05/11/05	0.5 U	ug/L	
W2326	05/11/05	0.23	ug/L		W2326	09/09/06	0.13 U	ug/L	
W2326	09/09/06	0.011 U	ug/L		W2326	05/07/07	0.13 U	ug/L	
W2326	05/07/07	0.0065 U	ug/L		W2326	05/21/08	0.08 U	ug/L	
W2326	05/21/08	0.022	ug/L						
W2329	06/15/94	0.006 U	ug/L		W2329	06/15/94	3 U	ug/L	
W2329	06/06/95	0.004	ug/L		W2329	06/06/95	3 U	ug/L	
W2329	06/05/97	10 U	ug/L		W2329	06/05/97	50 U	ug/L	
W2329	05/17/99	0.02 U	ug/L		W2329	05/17/99	3 U	ug/L	
W2329	04/20/01	0.02 U	ug/L		W2329	04/20/01	0.5 U	ug/L	
W2329	10/12/01	5 U	ug/L		W2329	10/12/01	2.7 J	ug/L	
W2329	05/04/03	0.02 U	ug/L		W2329	05/04/03	0.5 U	ug/L	
W2329	05/15/05	0.021 U	ug/L		W2329	05/15/05	0.5 U	ug/L	

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W2329	09/04/06	0.0065	U	ug/L	W2329	09/04/06	0.13	U	ug/L
W2329	05/13/07	0.014	U	ug/L	W2329	05/13/07	0.13	U	ug/L
W2329	05/21/08	0.015	j	ug/L	W2329	05/21/08	0.08	U	ug/L
W2333	12/17/86	0.0044		ug/L	W2333	12/17/86	6	U	ug/L
W2333	06/25/87	0.011		ug/L	W2333	06/25/87	6	U	ug/L
W2333	12/08/87	0.039		ug/L	W2333	12/08/87	6	U	ug/L
W2333	06/30/88	0.0028		ug/L	W2333	06/30/88	6	U	ug/L
W2333	12/15/88	0.23		ug/L	W2333	12/15/88	6	U	ug/L
W2333	03/28/89	0.03		ug/L	W2333	06/29/89	6	U	ug/L
W2333	06/29/89	0.0067		ug/L	W2333	06/28/90	10	U	ug/L
W2333	06/28/90	10	U	ug/L	W2333	06/20/91	10	U	ug/L
W2333	06/20/91	10	U	ug/L	W2333	05/28/92	10	U	ug/L
W2333	05/28/92	10	U	ug/L	W2333	06/03/93	6	U	ug/L
W2333	07/22/93	0.0123		ug/L	W2333	06/15/94	3	U	ug/L
W2333	06/15/94	0.15	U	ug/L	W2333	06/05/95	3	U	ug/L
W2333	06/05/95	0.004		ug/L	W2333	06/05/97	50	U	ug/L
W2333	06/05/97	10	U	ug/L	W2333	05/17/99	3	U	ug/L
W2333	05/17/99	0.02	U	ug/L	W2333	04/26/01	0.5	U	ug/L
W2333	04/26/01	0.019	U	ug/L	W2333	10/11/01	5	U	ug/L
W2333	10/11/01	5	U	ug/L	W2333	05/08/03	0.5	U	ug/L
W2333	05/08/03	0.02	U	ug/L	W2333	05/11/05	0.5	U	ug/L
W2333	05/11/05	0.022	U	ug/L	W2333	09/09/06	0.13	U	ug/L
W2333	09/09/06	0.0065	U	ug/L	W2333	05/13/07	0.13	U	ug/L
W2333	05/13/07	0.0065	U	ug/L	W2333	05/20/08	0.08	U	ug/L
W2333	05/20/08	0.017	U	ug/L	W2335	07/02/86	5	U	ug/L
W2335	07/02/86	0.092		ug/L	W2335	12/18/86	6	U	ug/L
W2335	12/18/86	0.021		ug/L	W2335	06/26/87	6	U	ug/L
W2335	06/26/87	0.0041		ug/L	W2335	12/08/87	6	U	ug/L
W2335	12/08/87	0.032		ug/L	W2335	06/30/88	6	U	ug/L
W2335	06/30/88	0.0058		ug/L	W2335	12/15/88	6	U	ug/L
W2335	12/15/88	0.068		ug/L	W2335	03/28/89	0.032		ug/L
W2335	03/28/89	0.011		ug/L	W2335	06/29/89	6	U	ug/L
W2335	06/29/89	0.016		ug/L	W2335	12/14/89	6	U	ug/L
W2335	12/14/89	0.0035		ug/L	W2335	06/28/90	6	U	ug/L
W2335	06/28/90	0.014		ug/L	W2335	12/04/90	6	U	ug/L
W2335	12/04/90	0.0082		ug/L	W2335	06/20/91	6	U	ug/L
W2335	06/20/91	0.013		ug/L	W2335	12/17/91	6	U	ug/L
W2335	12/17/91	0.0089		ug/L	W2335	05/28/92	6	U	ug/L
W2335	05/28/92	0.0141		ug/L	W2335	06/03/93	6	U	ug/L
W2335	06/03/93	0.0141		ug/L	W2335	06/15/94	3	U	ug/L
W2335	06/15/94	0.03	U	ug/L	W2335	06/07/95	3	U	ug/L
W2335	06/07/95	0.005		ug/L	W2335	06/05/96	50	U	ug/L
W2335	06/05/96	10	U	ug/L	W2335	06/05/97	50	U	ug/L
W2335	06/05/97	10	U	ug/L	W2335	04/30/98	5	U	ug/L
W2335	04/30/98	0.1	U	ug/L	W2335	05/15/99	3	U	ug/L
W2335	05/15/99	0.04		ug/L	W2335	04/05/00	3	U	ug/L
W2335	04/05/00	0.02	U	ug/L	W2335	04/26/01	0.5	U	ug/L
W2335	04/26/01	0.022	U	ug/L	W2335	10/17/01	5	U	ug/L
W2335	10/17/01	5	U	ug/L	W2335	05/05/02	2.9	U	ug/L
W2335	05/05/02	0.02	U	ug/L	W2335	05/08/03	0.5	U	ug/L
W2335	05/08/03	0.06		ug/L	W2335	04/24/04	0.96	U	ug/L
W2335	04/24/04	0.058		ug/L					

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W2335	05/14/05	0.022	U	ug/L	W2335	05/14/05	0.5	U	ug/L
W2335	09/11/06	0.044	U	ug/L	W2335	09/11/06	0.13	U	ug/L
W2335	05/12/07	0.02	j	ug/L	W2335	05/12/07	0.13	U	ug/L
W2335	05/24/08	0.023	U	ug/L	W2335	05/24/08	0.08	U	ug/L
W2336	09/19/06	0.026	U	ug/L	W2336	09/19/06	0.14	j	ug/L
W2336	12/07/06	0.017	U	ug/L	W2336	12/07/06	0.13	U	ug/L
W2336	12/07/06	0.018	U	ug/L	W2336	12/07/06	0.13	U	ug/L
W2336	02/27/07	0.013	j	ug/L	W2336	02/27/07	0.13	U	ug/L
W2336	05/13/07	0.17		ug/L	W2336	05/13/07	0.13	U	ug/L
W2336	08/24/07	0.013	U	ug/L	W2336	08/24/07	0.08	U	ug/L
W2336	10/31/07	0.014	U	ug/L	W2336	10/31/07	0.08	U	ug/L
W2336	03/28/08	0.052	U	ug/L	W2336	03/28/08	0.08	U	ug/L
W2336	05/22/08	0.37	U	ug/L	W2336	05/22/08	0.08	U	ug/L
W2336	08/23/08	0.042		ug/L	W2336	08/23/08	0.08	U	ug/L
W2336	11/20/08	0.014	U	ug/L	W2336	11/20/08	0.08	U	ug/L
W401	09/10/87	6	U	ug/L	W401	01/27/87	2100		ug/L
W401	06/26/90	320		ug/L	W401	04/02/87	650		ug/L
W401	06/18/91	20	U	ug/L	W401	09/10/87	3000		ug/L
W401	05/26/92	31		ug/L	W401	05/16/88	2000		ug/L
W401	06/01/93	10	U	ug/L	W401	12/19/89	56		ug/L
W401	06/13/94	10	U	ug/L	W401	06/26/90	2500		ug/L
W401	06/07/95	20	U	ug/L	W401	12/04/90	1500		ug/L
W401	06/04/97	100	U	ug/L	W401	06/18/91	1600		ug/L
W401	05/14/99	10	U	ug/L	W401	12/17/91	3900		ug/L
W401	04/22/01	9.5	U	ug/L	W401	05/26/92	1500		ug/L
W401	05/09/03	10	U	ug/L	W401	06/01/93	970		ug/L
W401	05/08/05	0.4	U	ug/L	W401	06/13/94	2000		ug/L
W401	09/19/06	0.065	U	ug/L	W401	06/07/95	890		ug/L
W401	05/17/07	0.37	U	ug/L	W401	06/04/97	1000		ug/L
W401	05/29/08	0.37	Uh	ug/L	W401	05/14/99	1200		ug/L
W402	09/10/87	0.11		ug/L	W402	04/02/87	1800		ug/L
W402	06/26/90	26		ug/L	W402	09/10/87	1600		ug/L
W402	06/18/91	50	U	ug/L	W402	05/16/88	1300		ug/L
W402	05/26/92	10	U	ug/L	W402	12/19/89	1200		ug/L
W402	06/01/93	10	U	ug/L	W402	06/26/90	1600		ug/L
W402	06/13/94	9		ug/L	W402	12/04/90	700		ug/L
W402	06/07/95	56		ug/L	W402	12/17/91	1600		ug/L
W402	06/04/97	80	U	ug/L	W402	05/26/92	1100		ug/L
W402	05/14/99	10	U	ug/L	W402	06/01/93	810		ug/L

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W402	04/22/01	9.7	U	ug/L	W402	04/22/01	2100		ug/L
	05/09/03	10	U	ug/L		05/09/03	260		ug/L
	05/09/03	10	U	ug/L		05/09/03	290		ug/L
	05/09/03	10	U	ug/L		05/09/03	250		ug/L
	05/08/05	2.3	U	ug/L		05/08/05	950		ug/L
	09/19/06	0.0082	U	ug/L		09/19/06	88	D	ug/L
	05/17/07	0.37	U	ug/L		05/17/07	960		ug/L
	05/29/08	0.37	Uh	ug/L		05/29/08	1300	h	ug/L
W403					W403	01/27/87	22000		ug/L
	09/10/87	140		ug/L		04/02/87	14000		ug/L
						09/10/87	9300		ug/L
	06/26/90	26		ug/L		05/16/88	2200		ug/L
						12/19/89	1500		ug/L
	05/26/92	10	U	ug/L		06/26/90	1100		ug/L
	06/01/93	10	U	ug/L		12/04/90	790		ug/L
	06/13/94	10	U	ug/L		06/18/91	1200		ug/L
	06/07/95	10	U	ug/L		12/17/91	1200		ug/L
	06/04/97	60	U	ug/L		05/26/92	560		ug/L
	05/14/99	10	U	ug/L		06/01/93	300		ug/L
	04/21/01	9.6	U	ug/L		06/13/94	320		ug/L
	05/09/03	10	U	ug/L		06/07/95	190		ug/L
	05/08/05	0.93	b	ug/L		06/04/97	560		ug/L
	09/19/06	0.033	U	ug/L		05/14/99	640		ug/L
W403	05/17/07	0.37	U	ug/L		04/21/01	530		ug/L
	05/29/08	0.37	Uh	ug/L		05/09/03	400		ug/L
						05/08/05	820		ug/L
						09/19/06	450	D	ug/L
						05/17/07	450		ug/L
						05/29/08	460	jh	ug/L
W405	09/10/87	260		ug/L	W405	01/27/87	9400		ug/L
						04/02/87	10000		ug/L
						09/10/87	8000		ug/L
						05/16/88	4500		ug/L
						11/20/89	170		ug/L
						12/19/89	7000		ug/L
	06/18/91	61		ug/L		12/04/90	5500		ug/L
	05/26/92	240		ug/L					
	06/01/93	750		ug/L					
	06/13/94	1000		ug/L					
	06/07/95	1400		ug/L					
	06/04/97	1000		ug/L					
	05/14/99	1100		ug/L					
	04/22/01	1900		ug/L					
	05/09/03	1300		ug/L					
W405	05/08/05	1500		ug/L					
	09/19/06	0.65	U	ug/L					
	05/17/07	1600		ug/L					
	05/29/08	2400		ug/L					
					W406	01/27/87	38		ug/L

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W406	09/10/87	0.031		ug/L	W406	04/02/87	47		ug/L
	06/18/91	10 U		ug/L		09/10/87	6 U		ug/L
	06/01/93	10 U		ug/L		05/16/88	12		ug/L
	06/13/94	10 U		ug/L		12/19/89	5 U		ug/L
	06/07/95	10 U		ug/L		06/18/91	10 U		ug/L
	06/04/97	10		ug/L		06/01/93	5 U		ug/L
	05/14/99	10 U		ug/L		06/13/94	5 U		ug/L
	04/22/01	9.5 U		ug/L		06/07/95	5 U		ug/L
	05/09/03	0.12		ug/L		06/04/97	58		ug/L
	05/08/05	0.39 b		ug/L		05/14/99	50 U		ug/L
	09/19/06	0.17		ug/L		04/22/01	24 U		ug/L
	05/17/07	0.08 U		ug/L		05/09/03	0.5 U		ug/L
	05/29/08	0.37 Uh		ug/L		05/08/05	0.5 U		ug/L
						09/19/06	0.13 U		ug/L
						05/17/07	0.13 U		ug/L
						05/29/08	2.5 Uh		ug/L
						05/29/08	0.08 Uh		ug/L
W407	09/10/87	0.02		ug/L	W407	01/27/87	5 U		ug/L
	06/01/93	10 U		ug/L		04/02/87	5 U		ug/L
	06/13/94	10 U		ug/L		09/10/87	6 U		ug/L
	06/07/95	10 U		ug/L		05/16/88	5 U		ug/L
	06/04/97	10 U		ug/L		06/01/93	5 U		ug/L
	05/14/99	10 U		ug/L		06/13/94	5 U		ug/L
	04/22/01	9.6 U		ug/L		06/07/95	5 U		ug/L
	05/09/03	0.02 U		ug/L		06/04/97	50 U		ug/L
	05/08/05	0.02 U		ug/L		05/14/99	50 U		ug/L
	09/19/06	0.025 U		ug/L		04/22/01	24 U		ug/L
	05/17/07	0.0065 U		ug/L		05/09/03	0.5 U		ug/L
	05/29/08	0.0058 Uh		ug/L		05/08/05	0.5 U		ug/L
						09/19/06	0.13 U		ug/L
						05/17/07	0.13 U		ug/L
						05/29/08	0.08 Uh		ug/L
W408	09/10/87	610		ug/L	W408	01/27/87	9400		ug/L
	06/26/90	780		ug/L		04/02/87	10000		ug/L
	06/18/91	710		ug/L		09/10/87	9900		ug/L
	05/26/92	640		ug/L		05/16/88	5000		ug/L
	06/01/93	450		ug/L		12/19/89	5600		ug/L
	06/13/94	350		ug/L		06/26/90	6200		ug/L
	06/07/95	500		ug/L		12/04/90	4800		ug/L
	06/05/96	270		ug/L		06/18/91	5300		ug/L
	06/04/97	650		ug/L		12/17/91	9100		ug/L
	05/01/98	240		ug/L		05/26/92	3800		ug/L
	05/14/99	150		ug/L		06/01/93	4400		ug/L
	04/22/01	110		ug/L		06/13/94	3100		ug/L
	05/02/02	76		ug/L		06/07/95	1300		ug/L
	05/02/02	80		ug/L		06/05/96	2000		ug/L
						06/04/97	2000		ug/L
						05/01/98	1200		ug/L
						05/14/99	1800		ug/L
						04/22/01	1200		ug/L
						05/02/02	430		ug/L
						05/02/02	440		ug/L

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W408	05/09/03	48	ug/L		W408	05/09/03	700	ug/L	
W408	04/26/04	44	ug/L		W408	04/26/04	450	ug/L	
W408	05/08/05	76	ug/L		W408	05/08/05	820	ug/L	
W408	05/08/05	78	ug/L		W408	05/08/05	870	ug/L	
W408	09/19/06	23	ug/L		W408	09/19/06	660 D	ug/L	
W408	05/17/07	32	ug/L		W408	05/17/07	520	ug/L	
W408	05/29/08	1.6 j	ug/L		W408	05/29/08	84 *	ug/L	
W409	09/10/87	1900	ug/L		W409	01/27/87	15000	ug/L	
W409	06/26/90	1600	ug/L		W409	04/02/87	15000	ug/L	
W409	06/18/91	1400	ug/L		W409	09/10/87	21000	ug/L	
W409	05/26/92	810	ug/L		W409	05/16/88	18000	ug/L	
W409	06/01/93	550	ug/L		W409	12/19/89	8900	ug/L	
W409	06/13/94	400	ug/L		W409	06/26/90	8700	ug/L	
W409	06/07/95	55	ug/L		W409	12/04/90	5800	ug/L	
W409	06/04/97	2200	ug/L		W409	06/18/91	6600	ug/L	
W409	05/14/99	190	ug/L		W409	12/17/91	11000	ug/L	
W409	04/22/01	440	ug/L		W409	05/26/92	6200	ug/L	
W409	05/09/03	85	ug/L		W409	06/01/93	4800	ug/L	
W409	05/08/05	130	ug/L		W409	06/13/94	3700	ug/L	
W409	09/19/06	320	ug/L		W409	06/07/95	2100	ug/L	
W409	05/17/07	220	ug/L		W409	06/04/97	5000	ug/L	
W409	05/28/08	160	ug/L		W409	05/14/99	2900	ug/L	
W410	09/10/87	0.24	ug/L		W410	04/02/87	160	ug/L	
W410	06/26/90	6	ug/L		W410	09/10/87	420	ug/L	
W410	06/18/91	10 U	ug/L		W410	05/16/88	6 U	ug/L	
W410	05/26/92	10 U	ug/L		W410	11/20/89	280	ug/L	
W410	06/01/93	10 U	ug/L		W410	12/19/89	12000	ug/L	
W410	06/13/94	10 U	ug/L		W410	06/26/90	130	ug/L	
W410	06/07/95	10 U	ug/L		W410	12/04/90	80	ug/L	
W410	05/14/99	10 U	ug/L		W410	06/18/91	39	ug/L	
W410	04/21/01	10 U	ug/L		W410	05/26/92	10 U	ug/L	
W410	04/22/01	9.6 U	ug/L		W410	06/01/93	5 U	ug/L	
W410	05/09/03	9.6 U	ug/L		W410	06/13/94	5 U	ug/L	
W410	05/08/05	10 U	ug/L		W410	06/07/95	7	ug/L	
W410	05/08/05	0.87 b	ug/L		W410	05/14/99	14	ug/L	
W410	09/19/06	0.084	ug/L		W410	04/21/01	50	ug/L	
W410	05/17/07	0.07 U	ug/L		W410	04/22/01	50 U	ug/L	
W410	05/29/08	0.66 h	ug/L		W410	05/09/03	47	ug/L	
W410	10/20/87	1.9 U	ug/L		W410	05/08/05	3.1	ug/L	
W410	05/15/99	0.03	ug/L		W410	09/19/06	20 U	ug/L	
W410	05/17/07	0.07 U	ug/L		W410	05/17/07	36 D	ug/L	
W410	05/29/08	0.66 h	ug/L		W410	05/29/08	30	ug/L	
W411	10/20/87	1.9 U	ug/L		W411	10/20/87	110 h	ug/L	
W411	05/15/99	0.03	ug/L		W411	05/15/99	690	ug/L	

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W411	04/25/01	0.02	U	ug/L	W411	04/25/01	14		ug/L
W411	05/08/03	0.02	U	ug/L	W411	05/08/03	12		ug/L
W411	05/14/05	0.18	U	ug/L	W411	05/14/05	17		ug/L
W411	09/18/06	0.021	U	ug/L	W411	09/18/06	31		ug/L
W411	05/15/07	0.039	U	ug/L	W411	05/15/07	11		ug/L
W411	05/25/08	0.02	U	ug/L	W411	05/25/08	15		ug/L
W2401	12/21/88	11000		ug/L	W2401	12/21/88	16000		ug/L
W2401	06/02/93	890		ug/L	W2401	06/02/93	4200		ug/L
W2401	06/15/94	1920		ug/L	W2401	06/15/94	3800		ug/L
W2401	06/07/95	550		ug/L	W2401	06/07/95	1800		ug/L
W2401	06/05/97	1800		ug/L	W2401	06/05/97	5700		ug/L
W2401	05/14/99	10	U	ug/L	W2401	05/14/99	4400		ug/L
W2401	05/07/01	9.6	U	ug/L	W2401	05/07/01	3200		ug/L
W2401	05/09/03	2400		ug/L	W2401	05/09/03	3100		ug/L
W2401	05/09/05	2800		ug/L	W2401	05/09/05	2900		ug/L
W2401	09/19/06	11000		ug/L	W2401	09/19/06	4200	D	ug/L
W2401	05/17/07	18000		ug/L	W2401	05/17/07	4900		ug/L
W2401	05/29/08	13000	h	ug/L	W2401	05/29/08	4500	jh	ug/L
W2402	12/21/88	1700		ug/L	W2402	12/21/88	17000		ug/L
W2402	06/28/90	0.2		ug/L	W2402	12/19/89	2500		ug/L
W2402	06/20/91	30	U	ug/L	W2402	06/28/90	1100		ug/L
W2402	05/27/92	10	U	ug/L	W2402	12/04/90	700		ug/L
W2402	06/02/93	10	U	ug/L	W2402	06/20/91	720		ug/L
W2402	06/15/94	0.081		ug/L	W2402	12/17/91	820		ug/L
W2402	06/07/95	10	U	ug/L	W2402	05/27/92	580		ug/L
W2402	06/05/97	80	U	ug/L	W2402	06/02/93	450		ug/L
W2402	05/14/99	10	U	ug/L	W2402	06/15/94	280		ug/L
W2402	04/26/01	10	U	ug/L	W2402	06/07/95	220		ug/L
W2402	05/09/03	10	U	ug/L	W2402	06/05/97	1000		ug/L
W2402	05/09/05	0.4	U	ug/L	W2402	05/14/99	1400		ug/L
W2402	09/19/06	0.033	U	ug/L	W2402	04/26/01	340		ug/L
W2402	05/17/07	0.37	U	ug/L	W2402	05/09/03	0.5	U	ug/L
W2402	05/29/08	0.37	Uh	ug/L	W2402	05/09/05	220		ug/L
W2402					W2402	09/19/06	370	D	ug/L
W2402					W2402	05/17/07	250		ug/L
W2402					W2402	05/29/08	110	h	ug/L
W2403	12/21/88	820		ug/L	W2403	12/21/88	6900		ug/L
W2403	06/28/90	660		ug/L	W2403	12/19/89	4500		ug/L
W2403	06/20/91	100	U	ug/L	W2403	06/28/90	3000		ug/L
W2403	05/27/92	720		ug/L	W2403	12/04/90	2600		ug/L
W2403	06/02/93	580		ug/L	W2403	06/20/91	3000		ug/L
W2403	06/15/94	880		ug/L	W2403	12/17/91	3800		ug/L
W2403	06/07/95	78		ug/L	W2403	05/27/92	3400		ug/L
W2403	06/05/97	300	U	ug/L	W2403	06/02/93	2800		ug/L
W2403	05/14/99	1300		ug/L	W2403	06/15/94	1900		ug/L
W2403	04/26/01	9.6	U	ug/L	W2403	06/07/95	1600		ug/L
W2403	05/09/03	1600		ug/L	W2403	06/05/97	2200		ug/L
W2403	05/09/05	3.6		ug/L	W2403	05/14/99	3500		ug/L
W2403					W2403	04/26/01	3000		ug/L
W2403					W2403	05/09/03	1800		ug/L
W2403					W2403	05/09/05	2100		ug/L

**Appendix D - Data Summary Table**  
**Naphthalene and Pentachlorophenol - Trend Analysis**  
**St. Regis Paper Company Site**

StationID	Date	Naphthalene			StationID	Date	Pentachlorophenol		
		Conc	Qualifier	Units			Conc	Qualifier	Units
W2403	09/19/06	1600	ug/L		W2403	09/19/06	1700	D	ug/L
W2403	09/19/06	500	ug/L		W2403	09/19/06	1800	D	ug/L
W2403	05/17/07	1400	ug/L		W2403	05/17/07	2300		ug/L
W2403	05/29/08	1300	h	ug/L	W2403	05/29/08	2100	h	ug/L
FISH1	05/27/92	0.004	U	ug/L	FISH1	05/27/92	6	U	ug/L
FISH1	06/07/95	0.003	U	ug/L	FISH1	06/07/95	3	U	ug/L
FISH1	09/11/06	0.0065	U	ug/L	FISH1	09/11/06	0.13	U	ug/L
FISH1	05/15/07	0.0065	U	ug/L	FISH1	05/15/07	0.13	U	ug/L
FISH1	05/20/08	0.017	U	ug/L	FISH1	05/20/08	0.08	U	ug/L
FISH2	05/27/92	0.004	U	ug/L	FISH2	05/27/92	6	U	ug/L
FISH2	06/07/95	0.003	U	ug/L	FISH2	06/07/95	3	U	ug/L
FISH2	09/11/06	0.0065	U	ug/L	FISH2	09/11/06	0.13	U	ug/L
FISH2	05/15/07	0.0092	U	ug/L	FISH2	05/15/07	0.13	U	ug/L
FISH2	05/20/08	0.008	U	ug/L	FISH2	05/20/08	0.08	U	ug/L
FISH3	05/27/92	0.004	U	ug/L	FISH3	05/27/92	6	U	ug/L
FISH3	06/07/95	0.005	b	ug/L	FISH3	06/07/95	3	U	ug/L
FISH3	09/28/06	0.0065	U	ug/L	FISH3	09/28/06	0.13	U	ug/L
FISH3	05/15/07	0.022	U	ug/L	FISH3	05/15/07	0.13	U	ug/L
FISH3	05/20/08	0.0097	U	ug/L	FISH3	05/20/08	0.08	U	ug/L
FISH4	05/27/92	0.62	ug/L		FISH4	05/27/92	6	U	ug/L
FISH4	12/10/92	0.09	ug/L		FISH4	06/02/93	6	U	ug/L
FISH4	07/22/93	0.00958	ug/L		FISH4	02/24/94	6	U	ug/L
FISH4	02/24/94	0.666	ug/L		FISH4	06/15/94	3	U	ug/L
FISH4	06/15/94	1.11	ug/L		FISH4	12/01/94	3	U	ug/L
FISH4	12/01/94	0.012	ug/L		FISH4	06/07/95	3	U	ug/L
FISH4	06/07/95	2.6	ug/L		FISH4	11/07/95	3	U	ug/L
FISH4	11/07/95	0.006	U	ug/L	FISH4	06/05/97	50	U	ug/L
FISH4	06/05/97	3	ug/L		FISH4	05/01/98	0.5	U	ug/L
FISH4	05/01/98	0.2	ug/L		FISH4	05/17/99	3	U	ug/L
FISH4	05/17/99	0.32	ug/L		FISH4	04/04/00	0.5	U	ug/L
FISH4	04/04/00	0.03	ug/L		FISH4	04/24/01	0.5	U	ug/L
FISH4	04/24/01	0.019	U	ug/L	FISH4	10/17/01	0.029	U	ug/L
FISH4	10/17/01	5.1	U	ug/L	FISH4	05/06/02	0.5	Uh	ug/L
FISH4	05/06/02	0.02	U	ug/L	FISH4	05/07/03	0.5	U	ug/L
FISH4	05/07/03	0.02	U	ug/L	FISH4	04/27/04	0.95	U	ug/L
FISH4	04/27/04	0.019	U	ug/L	FISH4	05/09/05	0.5	U	ug/L
FISH4	05/09/05	0.02	U	ug/L	FISH4	09/11/06	0.13	U	ug/L
FISH4	09/11/06	0.0065	U	ug/L	FISH4	05/15/07	0.13	U	ug/L
FISH4	05/15/07	0.01	U	ug/L	FISH4	05/20/08	0.08	U	ug/L
FISH4	05/20/08	0.017	U	ug/L					

## ***Appendix E***

### ***Monitoring Well Logs***

Client International Paper Drill Contractor Boart Longyear  
 Project Name St. Regis Paper Company Site Drill Method Rotasonic  
 Number 23/11-005 Drilling Started 3/4/08 Ended 3/4/08  
 Location Cass Lake, MN Logged By MMB

## LOG OF BORING W2228

Unique Well No. \_\_\_\_\_

SHEET 1 OF 3

Ground Surface Elevation 1304.45  
Top of Riser --  
Total Depth 69.0

DEPTH FEET	SAMPLE LENGTH & RECOVERY SAMPLE NUMBER	% GR/SA/ FINES	Headspace ppm	Discoloration- Odor- Sheen	Moisture	ASTM	LITHOLOGY	DESCRIPTION	WELL OR PIEZOMETER CONSTRUCTION DETAIL		ELEV. FEET
								0-5': Peat, fibrous, very dark, grayish brown (10YR 3/2).			
5	1	0/0/0		None None None	Frozen  Wet	PT		2-5': No recovery.			
5	2	0/0/0		None None None	Wet	PT		5-8': Peat, fibrous to amorphous peat, very dark grayish brown/amorphous peat is laminated below 7'.			
10	3	0/5/95	0	None None None	Wet	CL		8-15': Clay, light brownish gray (2.5Y 6/2), up to 25% organic material (bark, rootlets, shells), non-plastic, laminated.			
15	4	0/0/100	0	None None None	Wet	CL		15-20': Clay as above, up to 15% organic material (bark, rootlets, shells).			
20	5	0/5/95	0	None None None	Wet	CL		20-25': Clay, light olive gray (5Y 6/2), homogenous, very soft, up to 15% organic material (no shells).			
								(continued)			

ENVIRO LOG 5 (5/27/04) 2311005.GPJ BARRLOG6 28.GDT 6/25/08



Barr Engineering Co.  
4700 W 77th St. Suite 200  
Edina, MN 55435  
Telephone: 952-832-2600  
Fax: 952-862-2601

Remarks:

BGS = "below ground surface"  
Additional data may have been collected in the field which is not included on this log.

Client International Paper  
Project Name St. Regis Paper Company Site  
Number 23/11-005 -  
Location Cass Lake, MN

Drill Contractor Boart Longyear  
Drill Method Rotasonic  
Drilling Started 3/4/08 Ended 3/4/08  
Logged By MMB

## **LOG OF Boring W2228**

### **Unique Well No.**

SHEET 2 OF 3

*(continued)*



Barr Engineering Co.  
4700 W 77th St. Suite 200  
Edina, MN 55435  
Telephone: 952-832-2600  
Fax: 952-862-2601

**Remarks:**

BGS = "below ground surface"

BGS = below ground surface  
Additional data may have been collected in the field which is not included on this log.

Client International Paper  
 Project Name St. Regis Paper Company Site  
 Number 23/11-005  
 Location Cass Lake, MN

Drill Contractor Boart Longyear  
 Drill Method Rotasonic  
 Drilling Started 3/4/08 Ended 3/4/08  
 Logged By MMB

## LOG OF BORING W2228

Unique Well No. \_\_\_\_\_

SHEET 3 OF 3

Ground Surface Elevation 1304.45  
 Top of Riser --  
 Total Depth 69.0

DEPTH FEET	SAMP. LENGTH & RECOVERY SAMP. NUMBER	%GR/SA/ FINEs	Headspace ppm	Discoloration- Odor- Sheen	Moisture	ASTM	LITHOLOGY	DESCRIPTION	WELL OR PIEZOMETER CONSTRUCTION DETAIL	ELEV. FEET
55	10	0/90/10	0	None None None	Wet	SP SM		43-53': Sand with silt, gray, fine grained, homogenous, sharp contact with above. (continued)		1250
55	11	Tr/95/5	0	None None None		SP		53-60': Sand, grayish brown, fine to coarse grained, poorly sorted, sharp contact with above.		1245
60	12	Tr/95/5	0	None None None	Wet	SP		Fining downward.		1240
65				None None None				Fine to medium grained sand, gradational with above.		1235
65				None None None		SP		60-67': Sand, grayish brown, fine to coarse grained, poorly sorted, homogeneous.		1230
70		5/15/80	1	None None None	Wet	CL		67-69': Clay with sand, dark gray (5Y 4/1), medium plasticity, moderately firm, diamicton, one cobble at 67', gravel is subrounded to rounded.		
								End of Boring - 69 feet		



Barr Engineering Co.  
 4700 W 77th St. Suite 200  
 Edina, MN 55435  
 Telephone: 952-832-2600  
 Fax: 952-862-2601

Remarks:

BGS = "below ground surface"  
 Additional data may have been collected in the field which is not included on this log.

Client International Paper  
 Project Name St. Regis Paper Company Site  
 Number 23/11-005  
 Location Cass Lake, MN

Drill Contractor Boart Longyear  
 Drill Method Rotasonic  
 Drilling Started 2/29/08 Ended 3/3/08  
 Logged By MMB

## LOG OF Boring W2237

Unique Well No. \_\_\_\_\_

SHEET 1 OF 4

Ground Surface Elevation 1304.68  
 Top of Riser --  
 Total Depth 160.0

DEPTH FEET	SAMP. NUMBER	%GR/SA/ FINEs	Headspace ppm	Discoloration- Odor- Sheen	Moisture	ASTM	LITHOLOGY	DESCRIPTION	WELL OR PIEZOMETER CONSTRUCTION DETAIL	ELEV. FEET
5	1			None Swampy None	Fzn/Wt	PT		0-4.5': Fibrous peat, frozen to 2'.	PRO. CASING Diameter: 6" Type: Steel Interval: 1300	
10	2	0/65/35		None Swampy None	Wet	SP		4.5-12.5': Sand, very dark gray (10YR 3/1), fine to medium grained, with 40-60% organic material.	RISER CASING Diameter: 2" Type: Black steel Interval: 1295	
15	3	0/90/10		None None None	Wet	SP SM		12.5-15': Sand with silt, light brownish gray (2.5Y 6/2), fine-grained, sharp contact with above. 15-24': Sand, grayish brown (2.5Y 5/2), fine to medium grained, uniform.	GROUT Type: Cement Interval: 1290	
20	4	0/95/5		None None None	Wet	SP		24-29': Silty sand, gray (5Y 5/1), sharp contact with above and below.	SEAL Type: Fine-grained sand Interval: 1285	
25		0/80/20		None None None	Wet	SM		29-30': Sand, olive gray (5Y 5/2), fine to medium grained, homogeneous.	SANDPACK Type: Red Flint #40, Fine-grained Interval: 1280	
30	5	0/95/5		None None None	Wet	SP		30-34': Sand with silt, grayish brown (2.5Y 5/2), fine-grained, coarsening downward with 10% gravel.	SCREEN Diameter: 2" Type: Stainless steel Interval: 1275	
35		0/90/10		None None None	Wet	SP SM		34-40': Sand fine to coarse grained, with 10% gravel. At 34-34.5' layer of laminated gray (N 5/0) silt.		1270
40	6	10/85/5		None None None	Wet	SP		40-45': Sand. Note: low recovery.		1265
45	7	0/30/70	2	None None None	Wet	ML		45-46': Sandy silt, grayish brown (2.5Y 5/2), with several organic (grassy) horizons up to 0.2' thick.		1260
		0/100/0				SP		46-49': Sand, dark grayish brown (10YR 4/2), medium to coarse grained, subangular to well		1255
						SM		(continued)		



Client International Paper  
 Project Name St. Regis Paper Company Site  
 Number 23/11-005  
 Location Cass Lake, MN

Drill Contractor Boart Longyear  
 Drill Method Rotasonic  
 Drilling Started 2/29/08 Ended 3/3/08  
 Logged By MMB

## LOG OF BORING W2237

Unique Well No. \_\_\_\_\_

SHEET 2 OF 4

Ground Surface Elevation 1304.68  
 Top of Riser --  
 Total Depth 160.0

DEPTH FEET	SAMP LENGTH & RECOVERY	SAMP. NUMBER	%GR/SA/ FINEs	Headspace ppm	Discoloration- Odor- Sheen	Moisture	ASTM	LITHOLOGY	DESCRIPTION	WELL OR PIEZOMETER CONSTRUCTION DETAIL	ELEV. FEET
55	8	0/85/15	5/85/10	1	None None None	Wet	SP SM		Rounded, various lithologies. 49-50': Silty sand, olive gray (5Y 5/2), fine grained, homogeneous.		1250
60	9	5/95/0	5/95/0	1	None None None	Wet	SP		50-55': Sand, grayish brown (2.5Y 5/2), thinly bedded, fine to medium grained and thin (<2"), gray silt stringers, cobbles at 52', subrounded to rounded. 55-60': Sand, thinly bedded, grayish brown, fine grained, and medium to coarse grained sand.		1245
65	10						SP		60-65': Sand. Note: low recovery.		1240
70	11	5/90/5	5/90/5	2	None None None	Wet	SP		65-72': Sand grayish brown (2.5Y 5/2), fine to medium grained, homogeneous. Note: low recovery.		1235
75	12	5/90/5	5/95/0	0	None None None	Wet	SP		72-80': Sand, grayish brown (2.5Y 5/2), medium to coarse grained, mostly coarse, subrounded to rounded.		1230
80	13	10/90/0	10/90/0	1	None None None	Wet	SP				1225
85	14	20/75/5	20/75/5	1	None None None	Wet	SP		80-85': Sand with gravel, grayish brown (2.5Y 5/2), fine to coarse grained, mostly coarse, poorly sorted, gravel is subrounded to well-rounded.		1220
90	15	10/85/5	10/85/5	1	None None None	Wet	SP		85-91.5': Sand, grayish brown, fine to coarse grained, mostly medium, poorly sorted, gravel is 3-5" in diameter, subrounded to rounded, larger clasts have glacial striae and chatter marks. 87-87.5': Silt horizon, gray, laminated.		1215
95	16	80/20/0	10/85/5	1	None None None	Wet	GP		91.5-95': Gravel with sand, subrounded to well rounded, fining downward, sharp contact with above.		1210
	17	25/70/5	25/70/5	1	None None None	Wet	SP		95-105': Sand with gravel, grayish brown (2.5Y 5/2), medium to coarse grained, mostly coarse, gravel is 0.5-5", subrounded to well rounded, gradational contact with above.		1205

(continued)

Client International Paper				Drill Contractor Boart Longyear				LOG OF Boring W2237					
Project Name St. Regis Paper Company Site				Drill Method Rotasonic				Unique Well No.					
Number 23/11-005				Drilling Started 2/29/08 Ended 3/3/08				Ground Surface Elevation 1304.68					
Location Cass Lake, MN				Logged By MMB				Top of Riser --					
Total Depth 160.0													
DEPTH FEET	SAMP. NUMBER	SAMP LENGTH & RECOVERY	%GR/SA/ FINES	Headspace ppm	Discoloration- Odor-Sheen	Moisture	ASTM	LITHOLOGY	DESCRIPTION			WELL OR PIEZOMETER CONSTRUCTION DETAIL	ELEV. FEET
105	18	30/65/5	1	None None None	Wet	SP			95-105': Sand with gravel, grayish brown (2.5Y 5/2), medium to coarse grained, mostly coarse, gravel is 0.5"-6", surrounded to well rounded, gradational contact with above. (continued)				1200
110	19	0/10/90	1	None None None	Wet	ML			105-107': Silt, greenish gray (5GY 6/1), laminated.				
115	20	5/85/10	1	None None None	Wet	SP			107-110': Sand with silt, gray (5Y 6/1), fine grained, homogeneous, trace gravel.				1195
120	21	Tr/95/5	2	None None None	Wet	SP			110-115': Sand, greenish gray (5GY 6/1), medium grained with several silt and silty sand lenses, 2-3" thick.				1190
125	22	Tr/90/10	1	None None None	Wet	SP			115-120': Same as 110-115' interval.				1185
130	23	Tr/95/5	0	None None None	Wet	SM			120-122': Sand, greenish gray, fine to medium grained, homogeneous.				1180
135	24	15/70/15	0	None None None	Wet	SP			122-135': Silty sand with gravel, greenish gray, matrix supported diameter, medium dense, homogeneous, sharp contact with above, gravel is 0.5"-6" diameter, surrounded to rounded, sand is fine to medium grained.				1175
140	25	15/70/15	1	None None None	Moist-Wet	ML			125-130': Note: low recovery. Sample contains greenish gray sand and pebbles.				1170
145	26	20/75/5	1	None None None	Wet	SP			130-133': Sand with gravel, greenish gray, medium to coarse grained.				1165
150	27	0/0/100	1	None None None	Wet	SP			133-138': Silt, gray (5Y 5/1), firm, laminated, sharp contact with above.				1160
155					Moist-Wet	ML			135-140': No recovery.				1155
									138-147': Sand with silt, fine to medium grained.				
									147-149': Sand with gravel, greenish gray, fine to coarse grained, thinly bedded.				
									149-150': Silt, greenish gray, medium density, (continued)				

ENVIRO LOG 5 (5/27/04) 2311005.GPJ BARRLOG6 28.GDT 6/25/08



Barr Engineering Co.  
4700 W 77th St. Suite 200  
Edina, MN 55435  
Telephone: 952-832-2600  
Fax: 952-862-2601

Remarks:

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Additional data may have been collected in the field which is not included on this log.

Client International Paper  
 Project Name St. Regis Paper Company Site  
 Number 23/11-005  
 Location Cass Lake, MN

Drill Contractor Boart Longyear  
 Drill Method Rotasonic  
 Drilling Started 2/29/08 Ended 3/3/08  
 Logged By MMB

## LOG OF BORING W2237

Unique Well No. \_\_\_\_\_

SHEET 4 OF 4

Ground Surface Elevation 1304.68  
 Top of Riser --  
 Total Depth 160.0

DEPTH FEET	SAMP. SAMP. NUMBER	%GR/SA/ FINES	Headspace ppm	Discoloration- Odor- Sheen	Moisture	ASTM	LITHOLOGY	DESCRIPTION	WELL OR PIEZOMETER CONSTRUCTION DETAIL	ELEV. FEET
155	28	15/75/10 0/70/30	1	None None None None None None None None None None None None	Wet Wet	SP SM SM		homogeneous. 150-152': Sand with silt and gravel, gray (5Y 5/1), fine to coarse grained. 152-155': Silty sand, fine grained, homogenous.		1150
157.5	29	Tr/95/5 0/0/100	1	None None None	Wet	SP ML		Black staining 154-155'. 155-157.5': Sand, greenish gray (5GY 5/1), fine to medium grained, homogeneous. 157.5-160': Silt, firm, homogeneous.		1145
160								End of Boring - 160 feet		
165										1140
170										1135
175										1130
180										1125
185										1120
190										1115
195										1110
200										1105



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Remarks:

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Additional data may have been collected in the field which is not included on this log.

Client International Paper  
 Project Name St. Regis Paper Company Site  
 Number 23/11-005  
 Location Cass Lake, MN

Drill Contractor Boart Longyear  
 Drill Method Rotasonic  
 Drilling Started 3/5/08 Ended 3/5/08  
 Logged By MMB

**LOG OF Boring W2238**  
 Unique Well No. \_\_\_\_\_  
 SHEET 1 OF 3

Ground Surface Elevation 1303.33  
 Top of Riser --  
 Total Depth 66.5

DEPTH FEET	SAMP LENGTH & RECOVERY SAMP. NUMBER	%GR/SA/ FINES	Headspace ppm	Discoloration- Odor- Sheen	Moisture	ASTM	LITHOLOGY	DESCRIPTION	WELL OR PIEZOMETER CONSTRUCTION DETAIL	ELEV. FEET
13	1	0/0/0		None Swampy None	Wet			0-10': Peat, fibrous, very soft, abundant branches, grass, decomposed leaves.	PRO. CASING Diameter: 6" Type: Steel  RISER CASING Diameter: 2" Type: Black steel  GROUT Type: Cement  SEAL Type: Fine-grained sand Interval: 55.5-63.5'	1300
5	2	0/0/0		None Swampy None	Wet	PT				
10	3	0/5/95	0	None Swampy None	Wet	CL		10-13': Clay, light brownish gray (2.5Y 6/2) and grayish brown (2.5Y 5/2), up to 25% organic material, (grass, twigs, shells), laminated.	SANDPACK Type: Red Flint #40 Interval: 63.5-66.5'	1295
15	4	0/5/95	0	None Swampy None	Wet	CL		13-20': Clay, light brownish gray, homogeneous, up to 15% organic material, several fine sand lenses.	SCREEN Diameter: 2" Type: Stainless steel Interval: 65.5-66.5'	1290
20	5	0/5/95		None Swampy None	Wet	CL		20-30.5': Clay, light brownish gray (2.5Y 6/2) and grayish brown (2.5Y 5/2), very soft, laminated, some zones have up to 70% organic material.		1285
										1280

(continued)



Client	International Paper	Drill Contractor	Boart Longyear	LOG OF Boring W2238
Project Name	St. Regis Paper Company Site	Drill Method	Rotasonic	Unique Well No.
Number	23/11-005	Drilling Started	3/5/08	Ground Surface Elevation
Location	Cass Lake, MN	Ended	3/5/08	Total Depth
		Logged By	MMB	SHEET 2 OF 3

DEPTH FEET	SAMP. NUMBER	SAMP. LENGTH & RECOVERY	%GR/SA/ FINES	Headspace ppm	Discoloration- Odor- Sheen	Moisture	ASTM	LITHOLOGY	DESCRIPTION	WELL OR PIEZOMETER CONSTRUCTION DETAIL	ELEV. FEET
30	6	0/5/95		0	None Swampy None	Wet	CL		20-30.5': Clay, light brownish gray (2.5Y 6/2) and grayish brown (2.5Y 5/2), very soft, laminated, some zones have up to 70% organic material. (continued) 25-30.5': Clay light brownish gray ,<10% organic material, laminated.		1275
35	7	0/90/10		0	None None None	Wet	SP SM		30.5-37.5': Sand with silt, gray (10YR 5/1), fine grained, well sorted, no organic material.		1270
40	8	Tr/100/0		0	None None None	Wet	SP		35-37.5': Sand, grayish brown (2.5Y 5/2), same texture as 30.5-35 interval.		1265
45	9	Tr/100/0		0	None None None	Wet	SP		37.5-39': Sand, grayish brown, fine to coarse grained, poorly sorted, sharp contact with above and below.		1260
	10	0/90/10		0	None None None	Wet	SP SM		39-40': Silty sand, grayish brown, homogeneous. 40-47': Sand, grayish brown (2.5Y 5/2), fine to coarse grained, poorly sorted, coarser toward 47'.		1255
									47-53': Sand with silt, grayish brown (2.5Y 5/2), fine grained, homogeneous.		

(continued)



Client International Paper  
 Project Name St. Regis Paper Company Site  
 Number 23/11-005  
 Location Cass Lake, MN

Drill Contractor Boart Longyear  
 Drill Method Rotasonic  
 Drilling Started 3/5/08 Ended 3/5/08  
 Logged By MMB

## LOG OF BORING W2238

Unique Well No.

SHEET 3 OF 3

Ground Surface Elevation 1303.33  
 Top of Riser --  
 Total Depth 66.5

DEPTH FEET	SAMP. SAMP. NUMBER	LENGTH & RECOVERY	% GR/SA/ FINES	Headspace ppm	Discoloration- Odor- Sheen	Moisture	ASTM	LITHOLOGY	DESCRIPTION	WELL OR PIEZOMETER CONSTRUCTION DETAIL	ELEV. FEET
	11		0/90/10		None None None	Wet	SP SM		47-53': Sand with silt, grayish brown (2.5Y 5/2), fine grained, homogeneous. (continued)		
55	12		0/100/0	0	None None None	Wet	SP		53-55': Sand, grayish brown, fine grained, well-sorted, homogeneous.		1250
60			0/85/15		None None None	Wet	SM		55-57': Sand with silt, grayish brown, fine grained, homogeneous.		
65			Tr/95/5	0	None None None	Wet	SP		57-60': Sand, grayish brown, fine to coarse grained, poorly sorted, gradational contact with above.		1245
70			Tr/95/5		None None None	Wet	SP		60-66.5': Sand, grayish brown, fine to coarse grained, poorly sorted. Note low recovery.		1240
									End of Boring - 66.5 feet		1235
											1230

ENVIRO LOG 5 (5/27/04) 2311005.GPJ BARRLOG6\_28.GDT 6/25/08



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Remarks:

BGS = "below ground surface"  
 Additional data may have been collected in the field which is not included on this log.

***Appendix F***

***Spent GAC Documentation***

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>MND0575 97140</b>	2. Page 1 of 1	3. Emergency Response Phone <b>901-419-3845</b>	4. Manifest Tracking Number <b>004620673 JJK</b>		
5. Generator's Name and Mailing Address <b>International Paper 6700 Poplar Ave. Memphis TN 38117</b> Generator's Phone: <b>901-419-3845 / 203-358-7353</b>		Generator's Site Address (if different than mailing address) <b>2nd Street &amp; Neils Ave East Cass Lake, MN 56637</b>					
6. Transporter 1 Company Name <b>Weaverton, Transport &amp; Leasing Inc.</b>		U.S. EPA ID Number <b>PAD98070 7442</b>					
7. Transporter 2 Company Name		U.S. EPA ID Number					
8. Designated Facility Name and Site Address <b>Siemens Water Tech. 118 Park Rd. Downingtown, PA 19335</b> Facility's Phone: <b>402-241-2030</b>		U.S. EPA ID Number <b>PAD 987270725</b>					
<b>GENERATOR</b>	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) <b>X 1. Hazardous Waste Solid - N.O.S. Contains PCP - (Naphthalene) 9 NA3077 Pallet</b>		10. Containers No. <b>001</b> Type <b>TT</b>	11. Total Quantity <b>40,000 EST</b>	12. Unit Wt./Vol. <b>P</b>	13. Waste Codes <b>F034</b>
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information <b>CEC-PalR MN-GW</b> <b>ERG #171</b>							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.				Signature _____ Date _____			
Generator's/Officer's Printed/Typed Name <b>Richard White</b>				Month <b>16</b>	Day <b>21</b>	Year <b>08</b>	
<b>INT'L</b>	16. International Shipments	<input type="checkbox"/> Import to U.S.	<input type="checkbox"/> Export from U.S.	Port of entry/exit _____ Date leaving U.S.: _____			
	Transporter signature (for exports only):						
<b>TRANSPORTER</b>	17. Transporter Acknowledgment of Receipt of Materials	Transporter 1 Printed/Typed Name <b>Richard White</b>		Signature <b>[Signature]</b>	Month <b>16</b>	Day <b>21</b>	Year <b>08</b>
	Transporter 2 Printed/Typed Name			Signature <b>[Signature]</b>	Month	Day	Year
<b>DESIGNATED FACILITY</b>	18. Discrepancy						
	18a. Discrepancy Indication Space	<input type="checkbox"/> Quantity	<input type="checkbox"/> Type	<input type="checkbox"/> Residue	<input type="checkbox"/> Partial Rejection	<input type="checkbox"/> Full Rejection	
	Manifest Reference Number: _____						
	18b. Alternate Facility (or Generator)	U.S. EPA ID Number					
Facility's Phone:							
18c. Signature of Alternate Facility (or Generator)					Month	Day	Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1.	2.	3.	4.				
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name		Signature		Month	Day	Year	

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

ORDER # 1575  
Form Approved. OMB No. 2050-0039

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>A B 0 0 3 7 5 9 7 9 4 0</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800-535-5053</b>	4. Manifest Tracking Number <b>004245678 JJK</b>						
5. Generator's Name and Mailing Address <b>INTERNATIONAL PAPER 2ND STREET SANBILS AVE E CASS LAKE, MN 56633</b> Generator's Phone:											
6. Transporter 1 Company Name <b>UNIVAR USA INC.</b> U.S. EPA ID Number <b>M N D 9 8 0 C L S 7 3 6</b>											
7. Transporter 2 Company Name <b>ENGINEER TANK LINES INC.</b> U.S. EPA ID Number <b>M N D 0 4 4 1 7 6 1 2 3</b>											
8. Designated Facility Name and Site Address <b>HERITAGE - WTI, INC., D.B.A. WTI 1250 ST GEORGE STREET E LIVERPOOL, OH 43920</b> U.S. EPA ID Number <b>C R D 9 8 0 6 1 3 6 4 1</b>											
9a. Facility's Phone: <b>330-485-7700</b>											
9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) <b>1P2, HAZARDOUS WASTE, SOLID, N.O.S., 1P5NTA/CHLOROPHENOL, DEBRIS, 9, MAJOR, PG III, (PG-1), (REGULATORY)</b>				10. Containers <table border="1"><tr><th>No.</th><th>Type</th></tr><tr><td><b>02</b></td><td><b>D M</b></td></tr></table>	No.	Type	<b>02</b>	<b>D M</b>	11. Total Quantity <b>550</b>	12. Unit Wt./Vol. <b>P</b>	13. Waste Codes <b>F032</b>
No.	Type										
<b>02</b>	<b>D M</b>										
14. Special Handling Instructions and Additional Information <b>1. 9167-1 -CONTAMINATED DEBRIS (DIRECT) PLACARDS PROVIDED BY CARRIER/SHIPPER YES/NO DRIVER SIGNATURE ***** EX CALLEE MUST IDENTIFY UNIVAR USA AS REGISTRANT *****</b>											
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.											
Generators/Officer's Printed/Typed Name <b>Janet Jinkins</b>			Signature <b>Janet Jinkins</b>			Month <b>1</b>	Day <b>7</b>	Year <b>21 08</b>			
16. International Shipments <input checked="" type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.						Port of entry/exit: <b> </b>	Date leaving U.S.: <b> </b>				
17. Transporter Acknowledgment of Receipt of Materials											
Transporter 1 Printed/Typed Name <b>Merle Turner</b>			Signature <b>Merle Turner</b>			Month <b>1</b>	Day <b>7</b>	Year <b>21 08</b>			
Transporter 2 Printed/Typed Name <b> </b>			Signature <b> </b>			Month <b> </b>	Day <b> </b>	Year <b> </b>			
18. Discrepancy											
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						Manifest Reference Number: <b> </b>					
18b. Alternate Facility (or Generator)						U.S. EPA ID Number <b> </b>					
Facility's Phone: <b> </b>						Month <b> </b>	Day <b> </b>	Year <b> </b>			
18c. Signature of Alternate Facility (or Generator) <b> </b>						Month <b> </b>	Day <b> </b>	Year <b> </b>			
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)											
1.		2.		3.		4.					
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a											
Printed/Typed Name <b> </b>			Signature <b> </b>			Month <b> </b>	Day <b> </b>	Year <b> </b>			

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

GENERATOR	1. Generator ID Number <b>M MN057597940</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>901-419-3845</b>	4. Manifest Tracking Number <b>005116071 JJK</b>	
	5. Generator Name and Mailing Address <b>INTERNATIONAL PAPER 6400 POPE LANE AVE MEMPHIS, TN 38197</b>		Generator's Site Address (if different than mailing address) <b>2ND ST &amp; NEILLS AVE E. CASS LAKE, MN 56673</b>		
	Generator's Phone: <b>901-419-3845/203-358-7353</b>				
	6. Transporter 1 Company Name <b>WEAVERTOWN TRANSPORT LEASING INC.</b>		U.S. EPA ID Number <b>PAD98070749</b>		
	7. Transporter 2 Company Name		U.S. EPA ID Number		
	8. Designated Facility Name and Site Address <b>SIEMENS WATER TECHNOLOGIES CORP. 118 PARK RD DARLINGTON, PA 16115 412-741-2030</b>		U.S. EPA ID Number <b>PAD987270725</b>		
	Facility's Phone:				
	9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) <b>X 1. HAZARDOUS WASTE SOLID, N.O.S. (SPENT ACTIVATED CARBON CONTAINS PCP, NAPHTHALENE) 9, NA3077 PGIII</b>	10. Containers No. <b>001</b>	11. Total Quantity Type <b>EST 49,000 P</b>	12. Unit Wt./Vol. <b>F034</b>
	13. Waste Codes				
	14. Special Handling Instructions and Additional Information <b>CEC-PAPRMN-GW</b> <i>ERG #171</i>				
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.		Signature <i>James E. Lutze</i>			Month Day Year <b>10 07 08</b>
Generator's/Officer's Printed/Typed Name <b>James E. Lutze</b>		Port of entry/exit: <i>St. Louis, MO</i>			Date leaving U.S.: <b>10/07/08</b>
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit: <i>St. Louis, MO</i>			Month Day Year <b>10 07 08</b>
Transporter signature (for exports only): <i>Richard J. Lutze</i>		Date leaving U.S.: <b>10/07/08</b>			Month Day Year <b>10 07 08</b>
17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name <b>Richard J. Lutze</b>		Signature <i>Richard J. Lutze</i>			Month Day Year <b>10 07 08</b>
Transporter 2 Printed/Typed Name <b>Richard J. Lutze</b>		Signature <i>Richard J. Lutze</i>			Month Day Year <b>10 07 08</b>
18. Discrepancy 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection		Manifest Reference Number:			
18b. Alternate Facility (or Generator) Facility's Phone:		U.S. EPA ID Number			
18c. Signature of Alternate Facility (or Generator)		Month Day Year			
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)					
1.      2.      3.      4.					
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Printed/Typed Name <b>Richard J. Lutze</b>		Signature <i>Richard J. Lutze</i>			Month Day Year <b>10 07 08</b>

Carbon Scan 11-24-08

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>MN0057597940</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>901-419-3845</b>	4. Manifest Tracking Number <b>005116105 JJK</b>		
Generator's Site Address (if different than mailing address)							
<b>2ND ST &amp; NEILS AVE E. CASS LAKE, MN 56637</b>							
5. Generator's Name and Mailing Address <b>INTERNATIONAL PAPER 6400 POELAK AVE MEMPHIS, TN 38197</b>		Generator's Phone: <b>901-419-3845/203-358-7353</b>					
6. Transporter 1 Company Name <b>WEAVERTOWN TRANSPORT LEASING</b>		U.S. EPA ID Number <b>PAD98070746</b>					
7. Transporter 2 Company Name		U.S. EPA ID Number					
8. Designated Facility Name and Site Address <b>SIEMENS WATER TECHNOLOGIES CORP. 118 PARK RD DARLINGTON, PA 16114</b>		Facility's Phone: <b>412-741-2030</b> U.S. EPA ID Number <b>PAD987270725</b>					
<b>GENERATOR</b>	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) <b>X 1. HAZARDOUS WASTE SOLID, N.O.S. (SPENT ACTIVATED CARBON CONTAINS PCP, NAPHTHALEN) 9, NA3077, PGIII</b>		10. Containers No. <b>1</b> Type <b>TT</b>	11. Total Quantity <b>EST. 40,000</b>	12. Unit Wt./Vol. <b>P</b>	13. Waste Codes <b>#34</b>
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information <b>KRKEPAKXX CEC-PAPRMN-GW</b> <i>EAC-171</i>							
15. GENERATOR/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator/Offeror's Printed/Typed Name <i>J. A. Johnson</i>				Signature <i>James Johnson</i>	Month <b>11</b>	Day <b>24</b>	Year <b>08</b>
<b>TRANSPORTER INT'L</b>	16. International Shipments <input checked="" type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit: _____ Date leaving U.S.: _____				
	Transporter signature (for exports only):						
	17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name <i>F. J. Johnson</i>		Signature <i>Frank Johnson</i>		Month <b>11</b>	Day <b>24</b>	Year <b>08</b>
<b>DESIGNATED FACILITY</b>	18. Discrepancy 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection		Manifest Reference Number: _____				
	18b. Alternate Facility (or Generator) Facility's Phone: _____		U.S. EPA ID Number				
	18c. Signature of Alternate Facility (or Generator)				Month <b>11</b>	Day <b>24</b>	Year <b>08</b>
	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. _____ 2. _____ 3. _____ 4. _____						
	20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a Printed/Typed Name _____ Signature _____ Month <b>11</b> Day <b>24</b> Year <b>08</b>						